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The Chat

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THE CHAT

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Cover photo by Jimmy Wood, Camden, SC. Feather courtesy SC Department of Natural Resources.

South Carolina's Highly-ranked Neotropical Migratory Birds: Who and Where

A Wildlife Biologist Examines the Status of Four Important Species in South Carolina

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I hope that most Carolina Bird Club members are by now aware of Partners in Flight (PIF) and its efforts on behalf of all land birds, particularly neotropical migratory birds - the warblers, vireos, thrushes, tanagers, flycatchers, orioles, and others that breed "up here" but spend the winter in the tropics. PIF is composed of biologists, educators, birders, and others from federal, state, and private conservation agencies and organizations. Since its inception in 1990, PIF has focused on management, monitoring, research, and education issues to help migratory land birds. PIF is not an institution, and except for four regional coordinators, has no official staff or headquarters. It does have a structure with many participants, mostly in a volunteer or non-dedicated capacity. PIF has an international, national, regional, and state presence. Both North and South Carolina have State PIF working groups that meet periodically to work on state migratory bird issues.

One of PIF's most important jobs was coming up with a priority ranking system for the nearly 400 species of migrants found in the United States in summer. When dealing with such a large group of birds, it is obvious that some are doing better than others. These species also use a great variety of habitats - all the way from clearcuts to old growth bottomland hardwood forests. The intent of the prioritization scheme was to focus scarce resources - time and money - on species of greatest need. This ranking system for the Southeast has been completed, thanks largely to the efforts of Chuck Hunter, the Southeastern Regional Coordinator for PIF, and with input from many professional and amateur ornithologists throughout the region.

Before any serious conservation efforts on behalf of neotropical migrants can begin, we need to know where they are, what habitats they prefer, and

what the population trends are. This is a pretty daunting task, especially when such basic information as distribution is poorly known for many species. As someone once remarked, "Plotting the distribution of birds usually ends up plotting the distribution of bird watchers." The numerous Breeding Bird Atlas Projects conducted by the various states during the past 20 years were intended to correct this deficiency in bird distribution knowledge. Both North and South Carolina have done Atlas Projects, at least the field work portions. Although South Carolina's Atlas coverage was greatly reduced compared to other states because of observer shortages, our knowledge of breeding bird distribution in the state has increased significantly.

Some CBC members have been participating in a project at the heart of PIF efforts and didn't realize it. The Breeding Bird Survey, sponsored by the US Fish and Wildlife Service (now the National Biological Service), is one of the largest volunteer wildlife monitoring programs in the world, with over 4000 survey routes run each year. With data going back to 1966, the long-term information from this project is the primary source of trend information for neotropical migrants and other North American breeding birds.

But we need to know more, and CBC members can help PIF efforts by keeping track of high-ranking species, especially where birds might be nesting. Management information, such as numbers (density) and habitat use, is also badly needed for these and other neotropical migratory birds.

For this article, I wanted to single out, with a South Carolina coastal slant, four of the highest ranked neotropical migrants in the Carolinas - Black-throated Green Warbler, Swainson's Warbler, Painted Bunting, and Swallow-tailed Kite. I've included maps with what we know about their current breeding distribution in South Carolina.

Swallow-tailed Kite

The Swallow-tailed Kite is certainly one of the most striking and spectacular raptors in North America. Its black and white plumage, long forked tail, and aerial acrobatics make it unforgettable. The breeding distribution of this species, which at one time covered 21 states as far north as Minnesota, has been greatly reduced in the 20th Century. South Carolina's Francis Marion National Forest, between Charleston and Georgetown, has the northern-most nesting population in the world.

Probably the most consistent location to see this kite in the Carolinas is the Santee Delta, a two mile-wide stretch of open marsh and waterfowl impoundments at US Highway 17 between the North and South Santee Rivers. The Francis Marion kites leave their forest foraging grounds in the late morning and make regular, sometimes daily, flights (up to 15 miles) to the Delta, where

they may spend an hour or two hawking dragonflies and other flying insects over the marshes. Being a social bird, Swallow-tails usually form feeding flocks of up to a dozen or more, sometimes mixed in with Mississippi Kites (but astounding numbers of more than 100 kites in one flock have been seen here). The best time to be at the Delta is between 11:30 - 2:00 from mid-May through mid-July. The marshes just to the south and west of the North Santee River Bridge are a favored kite feeding location.

Swallow-tailed Kite nesting habitat consists of huge chunks (thousands of acres) of forested wetlands and marshes, mixed with some uplands, clearings, pasture, and other openings. This diverse habitat supports favored food items - small frogs, green anoles, green snakes, dragonflies, grasshoppers, wasp nest grubs, nestling birds, and even bats. The nest tree of choice in South Carolina is a tall loblolly pine (average nest tree height in the Francis Marion is 104 feet) within a wetland. Since Hurricane Hugo knocked down many of these trees, we started finding kites using cypress trees as nest sites. Nests are inconspicuous, near the tree top, and feature generous amounts of Spanish moss in the construction.

Preliminary surveys indicate that the Swallow-tailed Kite population, estimated to be 80 pair at the Francis Marion Forest, dropped about 25% after Hugo, probably from loss of nest trees and foraging habitat. However, for some years before Hugo, we had been receiving reports of Swallow-tails possibly nesting farther north, in Georgetown and Horry Counties along the Black, Waccamaw and Great Pee Dee Rivers. Swallow-tails are notorious for making long-distance, extralimital flights before and after the nesting season. They are regularly seen along North Carolina's Outer Banks, for example, and even into New England. However, kites seen together consistently in one location, in appropriate habitat, especially between late-May through early July, could indicate nesting. The easiest way to document nesting is to be out on the river or other open observation site during the first two weeks in April, when Swallow-tails build their nests and can be seen carrying Spanish moss and twigs in their talons.



Current Breeding Distribution of the Swallow-tailed Kite in SC

Black-throated Green Warbler

The Black-throated Green Warbler has one of the most unusual breeding distributions of any songbird in the Carolinas. Like a few other southeastern warblers, the Black-throated Green has a mountain population and a coastal one, with nothing, or very little, in between. The coastal race, sometimes referred to as "Wayne's" Black-throated Green Warbler, is greatly restricted, being found in a narrow strip that extends from just below Charleston up to Virginia's Dismal Swamp. In South Carolina the Francis Marion National Forest was probably the center of abundance for the Black-throated Green before Hurricane Hugo, but that storm apparently eliminated a lot of its habitat.

Our knowledge of Black-throated Green breeding habitat is somewhat ill-defined and occasionally contradictory. Arthur Wayne, the turn-of-the-century Charleston ornithologist who first recognized the coastal population as being distinct from others, found the Black-throated Green Warbler using tall cypress swamps and considered it the "highest ranging" of any warbler in his experience. Although my experiences agree with it being a canopy species, I have never seen a Black-throated Green Warbler in a cypress tree (but Craig Watson of the US Forest Service informs me that he does find Black-throated Greens using cypress trees on the Francis Marion National Forest).

I've found Black-throated Green Warblers in coastal South Carolina mostly in what I call "transitional wetlands" between cypress-tupelo swamps and uplands. Trees used by the warbler in these habitats consisted of red maple, black gum, sweet gum, and loblolly pine. The Black-throated Green is not a

bottomland hardwood species. Merrill Lynch described Black-throated Green habitat in eastern North Carolina, where it is often associated with white cedar trees, as "non-alluvial wetland," which seems to sum it up best.

In South Carolina, Black-throated Green Warblers apparently skip over Horry County and are not picked up again until the pocosin-rich environments of eastern North Carolina. The northern-most nesting record for South Carolina I'm aware of is a pair I watched feeding two recently-fledged young at Huntington Beach State Park, near the Horry-Georgetown County line, on 18 May, 1977. The location, just inside the gate at the visitor's contact station, was not characteristic of the usual Black-throated Green habitat I was familiar with at the Francis Marion National Forest. The Huntington Beach site was drier, with an almost solid loblolly pine overstory with some scattered hardwoods in the understory.

Wayne's Black-throated Green Warbler apparently breeds only as far south as the Edisto River on the Charleston-Colleton-Dorchester County border. Recently, John Gerwin of the North Carolina State Museum and Chris Turner and other graduate students at North Carolina State University found a fair number of Black-throated Greens in some of the extensive forested wetlands in this area.

In addition to refining its range, CBC members could increase our knowledge of this coastal warbler by taking notes on its behavior, habitat use, tree preference, relative abundance, and other biological aspects.



**Current Breeding Distribution of the Coastal Race of the
Black-throated Green Warbler in SC**

Swainson's Warbler

We have learned a lot about Swainson's Warbler distribution and habitat since Alexander Sprunt and E.B. Chamberlain wrote *South Carolina Bird Life* in 1949. The bird had a reputation then of being almost as rare as the Bachman's Warbler, Sprunt having seen only four Swainson's up to that time. We now know the warbler to be more widespread, although never common anywhere. It, too, has the split distribution of some other warblers, being found in the rhododendron-laurel thickets of the southern Blue Ridge mountains and forested wetlands of the coastal plain, with few records from the piedmont.

Bottomland hardwoods and other forested wetlands are places to start searching for this species in the coastal plain. "Electronic ornithology," rare to nonexistent in Sprunt's day, has made it possible to easily locate territorial Swainson's Warblers by the use of song tape playbacks (but please, not overdone). Swainson's prefers a thick understory and shrub layer, generally in the range of 10-15 feet tall, with some larger trees in the overstory. If the site is too thick to move in, or you have to look twice to tell time on your wristwatch, it's probably suitable for Swainson's Warbler. Canebrakes are especially good habitat for the warbler, although a dense thicket of shrubs and vines will do also.

These conditions are often found along river banks and levees, where vegetation flourishes in abundant sunlight. Swainson's habitat is also created by tornadoes and hurricanes, as we found at the Congaree Swamp National Monument after Hugo, where the forest was "opened up" when some of the large overstory trees were knocked down. Certain logging operations create this environment also.

Not all bottomlands are created equal in terms of Swainson's Warbler habitat. Recently, Lex Glover and I finished a breeding bird survey of the Waccamaw and Little Pee Dee River Heritage Preserves in Horry and Marion Counties and found not a single Swainson's on nearly 200 bottomland point counts. Probably the lack of a well-developed shrub layer was the main reason. The typical blackwater cypress-tupelo "muck" swamp rarely supports the thick understory conducive for this species.

Some of the Carolina bays and pocosin swamps that liberally dot the Carolina coastal plain also support Swainson's Warbler. In the same general location of the Waccamaw and Little Pee Dee Heritage Preserves, members of the Waccamaw Audubon Society found Swainson's at Cartwheel Bay Heritage Preserve and other bays in the area. Craig Watson also routinely finds Swainson's on the Francis Marion National Forest.

Like many neotropical migrants, Swainson's Warbler is an "area-sensitive" species, meaning it is only found, at least for long-term breeding purposes, in

large tracts of forested wetlands. Because it is a useful indicator species for conservation of other wetland birds, Partners in Flight is using the Swainson's Warbler for planning purposes.



Current Breeding Distribution of the Swainson's Warbler in SC

Painted Bunting

Except for the nearly-extinct Bachman's Warbler, the Painted Bunting is the highest-ranked neotropical migrant in the Carolinas. Although still common in the right location, Breeding Bird Survey trends for this species from 1966-1991 show an annual average decrease of 3%. This translates into a Painted Bunting population decline of more than 50% during this time.

Painted Buntings also have a restricted breeding range. The "eastern" Painted Bunting is found only in the coastal plain of the Carolinas, Georgia, and northern Florida. The "western" Painted Bunting (which may be a separate "look-alike" species according to some authorities) has a much more extensive range extending from the Gulf Coast to New Mexico.

Traditional Painted Bunting breeding range in the Southeast has been the narrow section of coastal barrier island and mainland maritime forest, although it was known to occur in reduced numbers as far north as the South Carolina and Georgia fall line. However, since the South Carolina Breeding Bird Atlas was completed, Painted Buntings have been found extensively in fallow fields, woodland edges, and hedgerow habitat of the inner coastal plain. This is the state's farm belt, and one atlaser felt that there was hardly an atlas block in farming country, at least west of the Santee River, that wouldn't support at least one pair of buntings.

Despite their brilliant, tropical-like plumage, male Painted Buntings can be inconspicuous and unnoticed, even while singing from an exposed power line, where they often appear as a small, dark bird. Being familiar with the song is the best way to determine their presence. The males also respond dramatically to a tape playback.

The coastal range of Painted Buntings constricts sharply in the Pee Dee region of South Carolina, and they are apparently rare to non-existent in Dillon, Darlington, Florence, Lee, and Marion Counties. Even in Horry County, Painted Buntings occur only in a thin strip east of the Waccamaw River.

Although coastal development has no doubt taken a toll on Painted Bunting habitat, Brown-headed Cowbird parasitism seems to have hit this species hard as well. Some birders from the Hilton Head area report they rarely find buntings feeding anything but cowbird fledglings. The Florida Fish and Game Commission has recently undertaken a Painted Bunting Feeder Watch Program to learn, among other things, the extent of cowbird parasitism for this species.

Perhaps competition from another related species whose range has greatly expanded this century, the Indigo Bunting, has hurt Painted Buntings. We conducted bird surveys at South, Bulls, and Capers Island after Hurricane Hugo, expecting the scrub-shrub conditions created by the storm to benefit Painted Buntings. Instead, we found that Indigos, unknown at these locations ten years earlier, outnumbered Painteds on two of the islands.



Current Breeding Distribution of the Painted Bunting in SC

Conclusion

Although birders throughout the Carolinas can contribute to our knowledge of these and other neotropical migrants, members of the Waccamaw Audubon Society (in Conway) and the Charleston Natural History Society are strategically located for clarifying the status and range of all four species.

For further information on Partners in Flight efforts in the Southeast, contact Chuck Hunter, US Fish and Wildlife Service, 1875 Century Blvd, Atlanta, GA, 30345, Tel. 404-679-7130; for North Carolina, contact Mark Johns, NC Wildlife Commission, PO Box 564, Cary, NC 27512, Tel. 919-362-9257; for South Carolina, contact John Cely, SC Department of Natural Resources, PO Box 167, Columbia, SC, 29202, Tel. 803-734-3893.

Acknowledgments

Thanks are extended to Lex Glover, Chuck Hunter, and Craig Watson for their reviews of this article.

1996 Spring Bird Count

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The Carolinas had 15 areas represented in this year's Spring Bird Count, down from 16 last year. Charlotte, Lenoir and Gaston County did not submit reports this year. Chapel Hill and Shelby, NC, were not included last year but are this year. Only three counts are from South Carolina, of which two are from the piedmont. The grand totals of individuals, species, and field hours for 1995 and 1996 were similar: 72,731 birds representing 231 species this year compared to 72,371 birds representing 229 species for last year. Total field hours were 955.35 this year compared to 955.75 last year. Four counts reported rain, and most areas had seasonal temperatures. Several compilers felt that the migration was below normal, and Spartanburg, SC, felt that a cold spring had delayed the departure of some species and delayed the arrival of others.

Looking at the numbers from the last several years, Bald Eagles are holding steady, with the Greensboro pair having another successful year. Jordan Lake reported none this year. The compiler felt all the power boat activity on the lake seems to have moved the birds into the northeast corner of the lake (which is outside their circle). After several years of noticeable increases, American Kestrels are back to their 1993 levels. *Buteo* hawks seem steady.

Wild Turkeys are increasing, a conclusion supported by the excited calls we have received from people who are seeing them along county roads. Northern Bobwhites were down slightly, and American Woodcocks were slightly up. This was not a good a year for Spotted or Solitary Sandpipers, both of which declined. Ring-billed Gulls increased, and Laughing Gulls showed up on several inland counts.

As usual, Barn Owls were hard to find, with only one reported. Great Horned Owls were also scarce. Only 9 were reported this year compared to 27 last year, despite more hours owling. Barred Owls and Eastern Screech-Owls held steady. Eastern Phoebe continued to decline. Swallows as a group declined, with the exception of Barn Swallows. After tripling their numbers in 1995, Ruby-crowned Kinglets have returned to their 1994 level.

As a group, vireos have come up slightly, with Red-eyed and Solitary increasing. Warbler numbers continued to decline, although at a slower rate than before. Ovenbirds actually increased greatly. Grasshopper Sparrows were back up after a dip last year. This is comforting, considering how so many open area and grassland species, such as the Eastern Meadowlark, continue to decline as open areas become housing and shopping centers. Grackles and Brown-headed Cowbirds were slightly up, as were American Goldfinches. Orchard Orioles and House Finches were down.

AVNC-AVERY COUNTY, NC. Center at intersection of US 221 and Old Jonas Ridge Rd., Pinola, NC. May 11, 0535-1700. Temp. 50°-70°F. Precipitation heavy 1330-1400 h, wind, light and variable, except in the afternoon; storm gusts to force 3 on Grandfather Mtn. in the morning. Sky conditions partly cloudy in the morning, overcast to mostly overcast in the afternoon.

Participants: Compiler Margery R. Plymire, Box 306, Linville Falls, NC, 28647; Stewart Skeate, Willy Summer.

Compiler's comments: This was not a good day for birding. Perhaps the approaching storm front had something to do with the unusually quiet morning.

CPNC - CHAPEL HILL, NC. Center at intersection of Franklin and Columbia Streets, Chapel Hill. May 11, 0530 -1800. Temp. 65°-90°F. Precipitation heavy in the afternoon, wind 5-20 mph, direction not noted. Partly cloudy with thunderstorms in the afternoon.

Participants: Compiler Will Cook, 418 Sharon Rd., Chapel Hill, NC 27514; Bryan Bomberg, Audrey Booth, Norm Budnitz, Nancy Buehler, Janet Campbell, Anson Cooke, Catherine Cooke, Jacqueline Dale, Kent Fiala, Edward Fless, Maurice Graves, Steve Graves, Perry Haaland, Carol Hamilton, Joe Harris, Lois Harris, Pat and Pete Hobson, Fran Hommersand, Alan Johnson, Steve Kahler, Jim Keighton, Betty King, Roger Kohn, Nina Ligh, Henry Link, Ken Lundstrom, John March, Irmgard Muller, Lyn Ogburn, Joanna Perkinson, Jeff Pippen, Kevin Powell, Joy Rabb, Jay Rabb, Barbara Roth, Harriet Sato, Mike Schultz, Lois Schultz, Doug Shadwick, Julia Shields, Pamela Timmons, Eleanor Wagstaff.

Compiler's comments: The most stunning bird, though not seen on count day, was the Mississippi Kite that landed in a tree in Norm Budnitz's yard (Garrett Drive in Orange County) and posed nicely for photos! A first for the Chapel Hill Spring Count was a Snowy Egret seen by Barbara Roth and

Betty King at the Little Creek impoundment on NC 54. Barbara and Betty also had a lingering American Coot, the first on a Spring Count since 1984.

Henry Link had good luck with shorebirds at the sewage plant on Farrington Road. In addition to 3 Solitary, 8 Spotted, and 13 Least Sandpipers, he picked out one adult alternate (breeding) plumaged Semipalmated Sandpiper, the first since 1983, and provided good written details. He also spotted two Semipalmated Plovers, only the second on a count since 1980.

Other rarities on the count included a late Northern Harrier and several count-week birds: Little Blue Heron and Yellow-crowned Night-Heron, Gray-cheeked Thrush, and a Canada Warbler.

The count of 23 Green Herons tied the record high set in 1979, and the count of 20 Least Sandpipers beat the old record of 19 set in 1980. Other species with high numbers were Acadian Flycatcher and Swainson's Thrush.

This count was well below average in both number of species and number of birds, both of which were the lowest on a Spring Count since 1974. Record lows were set for Northern Bobwhite, White-breasted Nuthatch, Yellow-rumped Warbler, White-throated Sparrow, and Eastern Meadowlark. The bobwhite and meadowlark continue their long decline. The low numbers of Yellow-rumped Warbler and White-throated Sparrow are obviously related to the late date of this count. The record low number of White-breasted Nuthatches is surprising and relates in part to the low number of party-hours, but they have generally been declining on spring counts since the mid-1980's. Tree Swallows were missed for the first time since 1972, and Savannah Sparrow for the first time since 1958! Both of these also relate to the late date.

DUNC - DURHAM, NC. Center one mile east and one mile north, jct. Eno River and US 501. April 21, 0530 to 1600 h. Temperature 60° to 80°F, with a trace of precipitation. No wind and partly cloudy.

Participants: Compiler Michael Schultz, 5504 Woodberry Rd., Durham, NC, 27707; Ben Aitken, Jonathan Bennett, Gordon Brown, Norm Budnitz, Will Cook, Anson Cooke, Kent Fiala, John Fredrick, Maurice Graves, Janet Krakauer, Tom Krakauer, Lori Marlow, Thelma Mielenz, Len Pardue, Jeff Pippen, Harriet Sato, Lois Schultz, Michael Schultz, Doug Shadwick, Kathleen Shapley, Julie Shields, Gwen Shillinglaw, Kurt Shillinglaw, Ben Steere, Jonathan Steere, Edith Tatum.

Compiler's comments: White Pelicans were reported by Doug Shadwick and Kent Fiala at Falls Lake.

GRNC - GREENSBORO, NC. Center at intersection of Pisgah Church Road and US highway 220. May 4, 0600 to 1930 h, Temperature 58° to

84°F, with no precipitation. Wind 12 mph SW in the morning and 9 mph from the W in the afternoon. Scattered clouds during the day.

Participants: Compiler Donald Allen, 2611 David Caldwell Dr., Greensboro, NC; Carolyn Allen, Donald Allen, Fred Berry, Dennis Burnette, Lynn Burnette, Charles Campbell, Chris Carter, Sue Cole, Linda Cook, Leto Copeley, Phil Crisp, Scott DePue, Tom Duckwall, Nancy Everhart, Peggy Ferebee, Delores Foutch, Wally Foutch, Rose Freedman, Larry Gasper, Stan Gilliam, Herb Hendrickson, Sally Howell, Jack Jezorek, Elizabeth Link, Henry Link, Roger McNeill, Clarence Mattocks, Jim Mattocks, Lynn Moseley, Megan O'Connor, Elizabeth Ogburn, Chip Prairie, Nancy Prairie, Evelyn Schoonover, John Schoonover, Joann Scott, Sue Scott, Wally Sills, Barbara Smith, Laurie Sorrell, Will Sorrell, Thomas Street, Ernest Swarts, Emily Talbert, Emily Tyler, Kenny Young, Shawn Young.

Compiler's comments: The most striking thing about the 1996 Spring Count is its similarity to the 1995 Spring Count. The weather, the number of species, the number of individual birds, the number of field parties, and the number of observers are all very much alike. Greensboro found a few birds that were not seen last year, but we also failed to see some others this year. Moseley/C. Allen/Tyler reported the Cattle Egret from A&T Farm, and the Yellow-crowned Night-Herons are part of a group the Audubon people have been watching since spring. D. Allen reported the Red-breasted Nuthatch from the Battleground Park area, identified by the call. Ferebee/ Hendrickson reported the Marsh Wren, with supporting details. Three different groups reported Solitary Vireos. The Golden-winged and Nashville Warblers were reported by the McNeill/Campbell/Gasper party (but the entire group did not see the Nashville). Three exotic species of waterfowl were seen. The Black Swan and the Mute Swan were reported by Gilliam/ DePue and later seen by Don Allen. The Ringed Teal was reported by D. Allen. The identification of the Ringed Teal was provided by H. Hendrickson.

GVNC - GREENVILLE, SC. Center at 35°35'N 77°14'W, jct. CR 1762 and SR 33. May 5, 0530 to 1530 h. Temperature 55° to 79°F, with no precipitation. Wind 5 mph NW with the sky overcast to cloudy.

Participants: Compiler John Wright, 1953 Quail Ridge Rd., Greenville, NC, 27858; Co-compiler Dr. Veronica S. Pantelidis, 106 Lakeview Dr., Greenville, NC, 27858; Brad Carlson, Jamie Glydon, Ken Harrell, David Kaminski, Jill Kaminski, Ernie Marshall, Jodi Nicholson, Veronica S. Pantelidis, Patricia Tyndall, Russ Tyndall, John Wright.

ICNC - IREDELL COUNTY, NC. May 5, 0630 to 1900 h. Temperature 61° to 84°F, with no precipitation. Wind 0-10 mph SW, with sunny skies.

Participants: Sam Cathey, 130 Park Street, Statesville, NC, 28677; Larry Ashley, Penny Benbow, Debbie Birnley, Sam Cathey, Bill English, Lois Goforth, Larry Marlin, Dick Mize, Janice Powell, Elaine Rhyne, John Robertson, Garnet Underwood, Ron Underwood.

JLNC - JORDAN LAKE, NC. Center former crossing of New Hope River and Pea Ridge Rd. (now under water). May 5, 0500 to 2000 h. Temperature 62° to 89°F, with no precipitation. Wind 0-5 mph SE with clear skies.

Participants: Compiler Barbara Roth, 347 Carolina Meadows Villa, Chapel Hill, NC, 27514-7519; Co-compiler Will Cook, 418 Sharon Rd., Chapel Hill, NC, 27514; Mary Altpeter, Barbara Beaman, Audrey Booth, Barbara Brooks, Norman Budnitz, Patrick Coin, Melissa Conley-Spenser, Will Cook, Anson Cooke, Ricky Davis (count period only), Beth Duncan, Claudia Egelhoff, Bryan Goldston, Maurice Graves, Perry Haaland, Bob Hale, Steve Hall, Willard Hartman, Walton Haywood, Chuck Helmick, Russell Herman, Loren Hintz, Fran Hommersand, John Kent, Betty King, Ken Knapp, Roger Kohn, Chip Konrad, Edward Kuenzler, Henry Link, Terry Logue, Virginia Long, Phil Manning, Melinda Meade, Lynn Milich, Joni Mitchell, Nina Mollett, Judy Murray, Monica Nees, Esther Pardue, Len Pardue, Havner Parish, Kevin Powell, Oliver Orr, Barbara Roth, Harriet Sato, Greg Schneider, Julia Shields, Jennifer Shoemaker, Merv Shumate, Jim Stackhouse, Mildred Stackhouse, Edith Tatum, Andy Upshaw, Margaret Vimmerstedt.

Compiler's comments: This count was held on a pleasant, summery day, but the number of species seen was rather mediocre compared to some of our better years. This was the 20th spring count held in this circle, and numbers of species have been as follows: 105, 127, 134, 137, 129, 136, 131, 142, 126, 130, 128, 135, 143, 145, 126, 146, 126, 123, 137, and 123 this year. Numbers of individuals have not shown any important trends.

The character of this count circle is changing. The lake is becoming much more popular for speed boats of all kinds, getting out early and making a big racket. This was the first year since 1985 that we did not see a Bald Eagle. The eagles have moved northeast of our circle. This area is supposed to be closed to speed boats and is included in the Chapel Hill circle. Eagles nest there.

We are losing most of the old fields, which have grown up in pines around the lake. Very few large cultivated farms remain. Instead the land is being used to keep riding horses. Other areas are being converted to bedroom

communities, with large homes but without developed gardens. Formerly there were many trails near the lake where birders were assigned territories, but most of these have now grown up in weeds and are not passable; so people's individual count areas are not the same. There is only one area in the south of the circle, near the Cape Fear River, where I have seen Northern Harriers in recent years. I hope we have not seen the demise of the Great Horned Owl in this area. None were found at Christmas time either. Prior to this, it was only missed in 1994.

We had a record low of Northern Bobwhite, perhaps not surprising in view of the above. It was perhaps surprising that we had a very low count of Eastern Phoebe (lowest since 1977). Although we had a fairly normal complement of Ring-billed Gulls, other gulls and terns were all missing on count day.

Blue Grosbeak numbers were only about half of what they were last year. This seems about a normal fluctuation from year to year, though. Evening Grosbeaks and Pine Siskins were still present. All were found at feeders.

It is, of course, hard to know whether to accept the Black-billed Cuckoo, which was heard by the same person as last year — but in his home area both times where a bird might be expected to repeat his flight pattern. A recent report suggests that this cuckoo may not be nearly as rare in migration as thought, judging by new methods of catching their flight sounds. It is interesting that a Least Flycatcher has been reported several times on this count, always from almost precisely the same area. This time we had new counters there, who missed it.

RANC - RALEIGH, NC. Center southern Wake County, Lake Wheeler Rd. May 11, 0600 to 1500 h. Temperature 65° to 88°F, with precipitation late in the afternoon. Slight wind in the morning, strong by mid-day, and gusty by afternoon. Sky was clear in the morning, becoming overcast by mid-day, and stormy in the afternoon.

Participants: Compiler John L. Conners, 1227 Mordecai Dr., Raleigh, NC, 27604; Julie Angerman-Stewart, Tom Augsburg, Geraldine Bowen, Jerome Brewster, Amanda Brown, Jeff Brown, Susan Campbell, Hal Carmichael, Lena Gallitano, Bob Hader, Henry Hammond, Diane Hardy, Christina Harvey, Jack Harvey, Ann Hicks, Nicole Kennedy, Ken Knapp, Margaret Marlatt, Monica Nees, David Penrose, Will Rowland, Karen Russell, Suzanne Scheetz, Pat Sprunt, Bob Wells, Tom Quay.

Compiler's comments - The date conflicted with area university graduations, so some birders were missing. We also missed a wave of migrants by a few days. This is the third year in a row the Hooded Mergan-

sers have bred on Yates Pond. There are at least two pairs of American Kestrels in downtown Raleigh.

RVNC - RAVEN ROCK STATE PARK, NC. Center at intersection of NC 210 and SR 1434; 2.75 miles north of Lillington. April 27, 0515 to 1930.h. Temperature 54° to 74°, with no precipitation. Wind 0-10 mph NE, with clear skies.

Participants: Compiler Paul C. Hart, Raven Rock State Park, Rt. 3, Box 1005 Lillington, NC 27545; Jim Bateson, Hal Broadfoot, Jr., David Brown, David Hannah, Paul Hart, Scott Hartley, Tom Howard, Bobby Lutfy, Kaye Parker, Mitch Reese, Larry Rose, Molly Salsig, Mary Stevens, Sarah Stevens, Carol Tingley.

SHNC - SHELBY, CLEVELAND COUNTY, NC. Center at jct. US 74 & NC 226. May 5, 0650 to 1530. Temperature 65°F, with no precipitation. No wind, with skies mostly clear.

Participants: Compiler Patricia Wilkison, 213 Windsor Dr., Shelby NC 28150; Dorothy McMurray, JoAnn Martin.

SPNC - SOUTHERN PINES, NC. Center 1 mile NE of Skyline. May 5, 0500 to 1730 h. Temperature 69° to 86°F, with no precipitation. Wind 6-8 SSE, with partly cloudy skies.

Participants: Compilers Elizabeth Watson and Dr. J.H. Carter III, P.O. Box 891, Southern Pines, NC 28388; Jackie Britcher, Kerry Brust, Dick Burk, Crawford Canton, J.H. Carter, Dick Dole, Lois Dole, Bryce Fleming, Charlotte Gatz, Pat Hoffman, Dean Holzgraf, Tom Howard, Sally Logan, Leo Magiera, Al McDonald, Trevor McDonald, Winifred Monroe, Alan Schultz, Elizabeth Watson.

WSNC - WINSTON-SALEM, NC. Center at intersection of Business I-40 and Silas Creek Parkway. May 4, 0500 to 1800 h. Temperature unrecorded, with no precipitation. No wind and sky clear.

Participants: Compiler David Disher, 4145 Chatham Hill Dr., Winston-Salem, NC, 27104; Kay Bergey, Regina Burt, Zack Bynum, Hartsell Cash, Peg Cochrane, Linda Davis, Rebecca Deaton, Doug DeNeve, Jim Dickerson, Cynthia Donaldson, Mary R. Erikson, Marilyn Granger, Bill Hammond, John Hammond, Susan Hammond, Dave Heavner, Bert Hollifield, Mabry Hopkins, Royce Hough, Lois Jones, Judy Jordan, Ray Kandt, Barbara and Leon Kendrick, Katherine Maiolo, Jim Martin, Tom Mobray, Ed Mulvey, Margaret Mulvey, Ann Newson, Dottie Pennington, Paul Powers, Melanie

Price, Lloyd Ramsey, Jackie Shelton. Jerry Shiffert, David Shuford, Marilyn Shuping, Mike Shuping, Jonna Skafidas, Joy Skafidas, Ramona Snavelly, Sebastian C. Sommer, Paul Spain, Jim Spencer, Bill Sugg, Mark Thomas, Gray Tuttle, Jay Wilhelmi.

Compiler's comments: This count was similar to years past. We continue to have new housing developments springing up. Our resident and nesting Common Raven populations keep increasing. We also continue to have small numbers of Fish Crows coming in, which makes Winston-Salem one of the few places to see Common Ravens and both species of crows. The migration was spotty. One area reported the activity as the best seen in years, while everyone else stated that the activity was below par. Our total individual count leans to the below par assessment.

CASC - CHARLESTON, SC. Center 14 mi. n.e. Mt. Pleasant, .5 mi. e. Hwy 17. May 5, 0630 to 1730 h. Temperature 70° to 86°F, with no precipitation. Wind variable 5-20 knots SE to SSE, with clear skies.

Participants: Compiler Edwin L. Blicht III, 16 Wyecreek Ave., Charleston, SC 29412; Edwin Blicht, Matthew Blicht, Bob Chinn, Ed Conradi, Hal Curry, Nancy DeMerell, Dennis Forsythe, Andrew Harrison, Julian Harrison, Fleetwood Hassell, Bobbin Huff, David Huff, Kim James, Russell K. Johnson, Jennifer Koches, Cheves Laland, Perry Nugent, Lacy Teston.

Compiler's comments: Count is down due in part to combining Bulls Island as one territory instead of two and having no count on Capers Island due to a death in the counter's family.

CGSC - CONGAREE SWAMP, SC. Center at Congaree River, 400 meters NW of confluence of Bates Mill Creek. May 4, 0630 to 2200 h. Temperature 60° to 90°F, with no precipitation. Wind 0-5 mph from the south, with clear skies.

Participants: Compiler Robin Carter, 4165 East Buchanan, Columbia. SC 29206; Donna Badly, Molly Bonnell, Robin Carter, Roger Clark, Caroline Eastman, Glenn Englehardt, Dennis Forsythe, Donna Forsythe, Henry Fuseler, Jerry Griggs, Tim Kalbach, Nancy Lyman, Kathleen O'Grady, Garry Sowell, Jack Stewart, Lula Stewart.

Compiler's comments: The 1996 Spring Count was the fourth in the Congaree Swamp Area, resulting in a typical species total of 111, down from the record of 113 in 1995. Coverage was about the same as last year (41.8 total field-hours in 1996 versus 41.5 in 1995). Despite a lackluster migration,

counters found five or six new species for the count, with 29 or 30 new all-time high counts, and only four new all-time lows.

The reason for the ambiguity for the numbers of new species is due to the fact that Roger Clark found a Bicknell's Thrush this year (newly recognized species). In 1993 we had a "Gray-cheeked Thrush," but this bird was not described well enough for us to be able to guess to which of the newly-split species it should be attributed (Gray-cheeked or Bicknell's).

As usual, there were a few rarities, the most outstanding of which was the Olive-sided Flycatcher found by Tim Kalbach, Gary Sowell, and Nancy Lyman. This species is extremely rare at any time in South Carolina, and just about unprecedented in spring. Notable high counts include an amazing 49 Mississippi Kites and an encouraging 31 Northern Bobwhites.

Glenn Englehardt and his party were assigned to cover the Kingsnake Trail at Congaree Swamp National Monument, usually one of the best birding areas in the park. When they got to their assigned area, they found that all but 100 yards of the trail were under water, so they spent the morning counting birds in essentially a single spot. Glenn was amazed that they found 50 species in one spot, including two Northern Rough-winged Swallows (rare in the park), a Veery, and 12 species of warblers, including a Canada. Glenn advises us to find a good spot during migration and quietly wait a few hours. You might be surprised at what you see.

SPSC - SPARTANBURG, SC. Center just south of Spartanburg Airport. May 11, 0600 to 2000. Temperature 65° to 75°F, with .25 inch of rain. Wind 0-5 mph, increasing to 5-15 mph during a thunderstorm in the afternoon. Sky overcast and cloudy, with morning rain.

Participants: Compiler Lyle Campbell, 126 Greengate Lane, Spartanburg, SC; Frankie Altman, Lee Altman, Robbie Allen, Tom Allen, Susan Barry, Anna Bennett, Michael Bennett, Tim Brown, Lyle Campbell, Matthew Campbell, David Campbell, Marion Clark, Sam Cooper, John Erikson, Teresa Glenn, Brian Glenn, Catherine Glenn, J.B. Hines, Myra Hines, Gill Hopper, Jack Jennings, George Labancik, Micky Marotte, Marian Murph, Gill Newberry, Gibbs Patton, Bob Powell, Sandra Powell, Doug Raynor, Alan Rose, Mac Shealey, Walton Scott, Ginny Scott, Gerald Thurmond, Les Young.

Compiler's comments: Spring has been delayed with the extended cold weather. Our rehabilitation people report baby birds and squirrels running two to three weeks late, and our botanist states that the vegetation is frost damaged and late blooming. For example, in mid-May the Cowpens National Battlefield normally has huge flocks of Cedar Waxwings feeding on an

abundance of ripe mulberries. Twenty-five waxwings were observed, and the mulberries had yet to ripen.

Piedmont Audubon ran the Spring Count and North American Migration Count simultaneously. May 11 turned out to be a poor weather day, with morning drizzle and an afternoon thundershower. However, May 11 was the center of an exceptional week for birding, and several of us were able to work the week with excellent results. We ran a count circle, a Spartanburg County Count, and a Cherokee County Count.

We had a record count, one that will be difficult to match. The obvious components are lingering winter residents like the Junco and Brown Creeper; delayed early migrants like the Blue-winged Teal; on-time late migration such as the warblers; the timely appearance of such sporadic migrants as Bobolink and Rose-breasted Grosbeak; a larger than normal number of birders for field parties; and excellent conditions for the count week.

From the count circle, our documentation birds were Yellow-crowned Night-Heron, Barn Owl, Yellow-bellied Sapsucker, Brown Creeper, American Pipit, Dickcissel, and Dark-eyed Junco. Exceptional for the spring in our area were Pied-billed Grebe, Double-crested Cormorant, Cattle Egret, Blue-winged Teal, American Kestrel, Horned Lark, Cliff Swallow, Ruby-crowned Kinglet, Kentucky Warbler, Rose-breasted Grosbeak, and the first known Spartanburg County Bobolink flock since 1973.

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
Common Loon			2				1									3
Pied-billed Grebe			1	2	2										*	5
Brown Pelican													188			188
White Pelican			3													3
Dbl.-cr. Cormorant	1	68	587	92	20		240	3	5	11	15		168	1	*	1211
Anhinga													12	2		14
American Bittern													2			2
Least Bittern										1			1			2
Great Blue Heron	15		25	3	11	9	7	7	5	1	4	3	38	21	8	157
Great Egret			4	2	21	2				*			105	10		144
Snowy Egret	1									1			117			119
Little Blue Heron	*						*			1			15	2		18
Tricolored Heron													23			23
Cattle Egret				1	5		3		1				16	20	3	50
Green Heron	23		9	11	10	7	10	6	6	1	8	9	16	5	4	125
Black-cr. Nt-Heron			1										4			5
Yellow-cr. Nt-Heron	*			6				1			3		6	1	1	18
Glossy Ibis													10			10
Wood Stork													2			2
Mute Swan				1												9
Canada Goose	2	180	137	323	49	47	54	64	72	6	43	266	2	3	62	1310
Wood Duck		44	65	6	33	3	22	30	11	37	1		9	12	2	275
Am. Black Duck			2	1	1								3			7
Mallard		38	51	251	2	19	35	32	23	8	72	107	2	1	71	712
Blue-winged Teal			6	1		2							4		*	13
Gadwall					1											1
Ring-necked Duck								2								2
Hooded Merganser					3			3								6
Red-br. Merganser				1						1						2
Ruddy Duck				1						2						3
Black Vulture		8	10	3	17	6	11			3			46	13	10	127
Turkey Vulture	2	80	51	18	84	26	110	14	24	6	14	44	128	28	38	667
Osprey		5	6	1	2		18	4		2	*		34			72

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
Swallow-tail, Kite													7			7
Mississippi Kite	*												11	49		60
Bald Eagle	11		2	3	1								3			20
Northern Harrier	1	*											1			2
Sharp-shin, Hawk	4		5	2	2	1							1		*	15
Cooper's Hawk	1		2	1			2	*	1			8		3	1	19
Accipiter sp.			1				1									2
Red-shoulder Hawk	13		12	8	3	5	18	1	11		7	2	3	7	4	94
Brd.-winged Hawk	2		2	4	2		3		4	1	*	4			*	22
Red-tailed Hawk	1	26	19	25	17	6	25	13	21	2	14	24	14	7	8	222
American Kestrel				6	2			3	2		1	*	5		*	19
Merlin			1									1				2
Wild Turkey			7			11	2		1	1			4	1	3	30
Northern Bobwhite	4		11	1	19	12	14	6	32	5	12	10	12	31	21	190
Clapper Rail													23			23
King Rail					3								1			4
Virginia Rail					2											2
Sora					1											1
Common Moorhen													24			24
American Coot	1		1	2			2				17		15		2	40
Black-bld. Plover													60			60
Wilson's Plover													5			5
Semipalm. Plover	2										7		393			402
Killdeer	37	23	32	32	54	13	33	11	40	2	21	24	61	9	12	372
Am. Oystercatcher													40			40
Black-necked Stilt					1	1						1	10			10
Greater Yellowlegs											2	1	204			209
Lesser Yellowlegs				2							4		64			70
Solitary Sandpiper	5	6	14	8	8	13	4	4	2	6	13	12	1		2	90
Willet							*						40			40
Spotted Sandpiper	3	13	11	12	15	8	18		14	5	21	16	12		2	150
Whimbrel													285			285
Marbled Godwit													8			8

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
Ruddy Turnstone													274			274
Red Knot													30			30
Semip. Sandpiper	1												42			43
Western Sandpiper													12			12
Least Sandpiper	20			4			4	2			55	12				97
Pectoral Sandpiper					1						4	7				12
Dunlin													677			677
Sh.-bill. Dowitcher													537			537
Common Snipe				2	1				1							5
Am. Woodcock					2		4				1		1			8
Laughing Gull					15						1		1286			1302
Ring-billed Gull	12	475	34	387			175	1		33	6	30	44			1197
Herring Gull		6											3			9
Gull-billed Tern													4			4
Caspian Tern		20					*				2					22
Royal Tern													31			31
Sandwich Tern													10			10
Common Tern													5			5
Forster's Tern													58			58
Black Skimmer													19			19
Rock Dove	45	75	95		54		14		43	7	5	97	7	27	71	633
Mourning Dove	5	123	344	119		225	206	144	192	31	210	238	96	123	286	2557
Com. Ground-Dove													6			6
Blk.-billed Cuckoo							1									1
Yel.-billed Cuckoo																
Common Barn-Owl					20		12	4		1	10	3	35	22	1	124
East. Screech Owl				5	3		1		3		1	6	6	1	*	1
Gt. Horned Owl	1	1	1	1			1		1				2	1	*	9
Barred Owl	5	15	5	9	9	5	12	1	2		3	3	3	15	1	79
Com. Nighthawk				1	1	1		*			9	4	3	1	3	23
Chuck-will's-widow		1			9	2	3		8		26	6	49	7	8	119
Whip-poor-will	3	6		8	8	6	26		8		20	*	20	3	*	100
Chimney Swift	2	187	48	308	73	81	124	69	84	16	75	232	93	62	148	1602

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
Ruby-thr. Hummer	2	32	18	17	14	9	20	9	10	2	17	12	7	10	8	187
Belted Kingfisher		8	5	10	9	3	5	13	3	1	9	8	6	2	6	88
Red-head. Woodp.		25	31	13	5	2	22	10	3		12	2	102	29	*	256
Red-bel. W-pecker		122	85	83	22	30	132	45	46	7	73	75	116	60	23	919
Yel.-bel. Sapsucker				1					1						1	3
Downy W-pecker	1	41	36	22	8	7	29	13	12	2	6	26	9	15	6	233
Hairy Woodpecker	1	6	2	8	3	5	6	2	1		1	9	3	5	2	54
Red-ckd W-pecker											17		4			21
Northern Flicker	2	26	24	41	9	11	28	12	13	3	15	31	10	5	7	237
Pileated W-pecker	2	10	4	5	10	6	12	6	5	2	10	4	21	23	1	121
Olive-sd Flycatcher														1		1
E. Wood-Pewee		35	1	12	31	6	64	12	9	4	30	12	13	34	5	268
Acadian Flycatcher		61	1	4	36	1	21	32	20		13	7	6	37	3	242
Willow Flycatcher												2				2
<i>Empidonax</i> sp.							1	1								2
Eastern Phoebe	1	20	21	11	5	15	17	4	10	4	8	13	1		25	155
Gt. Cr. Flycatcher	3	35	11	31	67	8	69	31	38	3	81	20	297	97	8	799
Eastern Kingbird		33	17	51	34	43	106	29	36	22	67	41	41	54	21	595
Horned Lark				3	37				5					1	2	48
Purple Martin		25	31	197	16	134	85	18	18	8	96	68	297	23	*	998
Tree Swallow			21	2	17	4	12			1		8	53			118
Rough-w. Swallow	2	36	4	30	50	8	25	16	26	2	13	40	16	6	6	280
Bank Swallow					2				6		3		1			12
Cliff Swallow		3	4				86					5				98
Barn Swallow	4	78	72	116	108	62	157	92	150	10	101	117	665	32	50	1814
Blue Jay	17	112	316	245	59	73	156	45	93	22	91	246	29	29	129	1662
American Crow	26	199	92	202	137	136	210	98	96	13	125	143	39	50	43	1609
Fish Crow		8	24	12	23		15	172	11		35	1	36	30	1	368
Common Raven	5											8				13
Carolina Chickadee	11	149	131	115	44	17	141	54	55	2	45	114	36	32	45	991
Tufted Titmouse	22	207	206	170	50	36	169	63	88	6	75	110	54	46	27	1329
Red-br. Nuthatch	4		2	1							*				*	7
White-br. Nuthatch		8	9	15	3	5	10	4	1	1	10	10	4	13	4	97

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
Brown-he. Nuthatch		18	10	21	5	2	29	2	4		49	9	34	13	7	203
Brown Creeper															1	1
Carolina Wren	2	145	105	87	53	22	143	63	58	6	93	86	80	103	55	1101
House Wren	2	6	15	12	2	6	2	4	3	4		28	1		4	89
Winter Wren	1															1
Marsh Wren				1								1	11			13
Golden-cr. Kinglet			1		1											2
Ruby-cr. Kinglet			20		1			1	3			1			*	26
B-g. Gnatcatcher		161	322	65	67	20	225	54	93	5	47	40	43	45	5	1192
Eastern Bluebird	1	162	79	91	91	143	128	52	158	18	97	56	47	15	110	1248
Veery	4	2		11				1			1	10		1	*	30
Gray-cheek Thrush		*									1					1
Bicknell's Thrush														1		1
Swainson's Thrush		18	37	1	1	2	5	1		1		44				109
Hermit Thrush			3	2	1	1			4			2				13
Wood Thrush	9	51	30	55	55	18	92	18	37	4	38	39	3	17	6	472
American Robin	28	215	583	101	155	118	112	112	120	35	124	430	2	8	340	2586
Gray Catbird	20	48	1	66	18	14	33		38	4	49	78	7	20	7	403
N. Mockingbird		152	81	150	89	118	84	45	88	30	138	129	194	90	127	1515
Brown Thrasher		49	29	42	27	26	60	11	35	8	41	53	44	35	79	539
American Pipit						75									1	76
Cedar Waxwing		27	128			48	36	64		1	12	130	16	18	15	495
Loggerhead Shrike					6	2		1	8	2	5		11	30		65
European Starling	9	240	189	804	374	246	179	160	144	34	143	253	79	20	259	3133
White-eyed Vireo		29	49	6	36		34	14	28	1	17	7	48	74	*	343
Solitary Vireo	13	1	7	4			3				2	2				32
Yellow-thr. Vireo					11	1	14	4	11		4	1	12	6	*	98
Red-eyed Vireo	22	154	155	118	73	34	268	72	84	14	43	108	38	59	19	1261
Blue-winged Warb.			1	2					3			2				8
Golden-wi. Warbler																2
Orange-crwd Warb.					1				1							1
Nashville Warbler																1
Northern Parula	3	38	81	31	52	9	94	13	43	2	13	16	31	84	8	518

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
Yellow Warbler	9	4	14	12	9	11	2	3			3	17			*	84
Chestnut-s. Warb. 18			1		4	3						2			*	28
Magnolia Warbler	2		*		1	2					*			1	*	8
Cape May Warbler	1		9		5					3		14				33
Blk.-thr. Blue Warb. 20	8	3	42	14	4	37	3	13		1	6	28		24	1	203
Y-rumped Warbler	8	264	106	25	39	152	12	169		6	67	157	6	6	*	1017
Blk-th Green Warb. 3			5								3					11
Blackburnian Warb.			1									2		1		4
Yellow-thr. Warbler	13	58		17		86	6	23			18		14	29	3	267
Pine Warbler	51	62	28	22	3	130	24	27		2	45	10	49	49	12	514
Prarie Warbler	28	36	6	42	5	52	3	28		5	13	10	71	11	5	315
Palm Warbler	12				1											13
Bay-breasted Warb.		*	1			1				*	1					3
Blackpoll Warbler	2		4	8			1			1	1			3	*	20
Cerulean Warbler		1														1
Blk. -&-white Warb.	9	11	21	23	4	17	2	49		1	20	6		9		172
American Redstart	35	47	19	5	4	57	5	1		1	16	13		18	1	222
Prothonotary Warb.	18	22	2	64	1	24	8	16			8	1	34	53		251
Worm-eating Warb.		3	4	1	1	3	4	2			1	*			*	19
Swainson's Warbler				1							2			8		11
Ovenbird 16	41	33	18	55		147	24	53		25	9			4		425
No. Waterthrush	3	*		1	1		1	1			3			6		20
La. Waterthrush	10	1	1	17		16	7	11		1			1	3	1	69
Kentucky Warbler	9	1		7		2	2	7		1	1		6	13	1	50
Com. Yellowthroat 5	75	182	56	87	16	115	26	53		5	35	54	51	43	6	809
Hooded Warbler 3	35	6		4		23	8	15		11	*		17	22	1	145
Wilson's Warbler						1										1
Canada Warbler 8	*		2			*				1	*			1		12
Yellow-br. Chat	39	1	14	30	18	68	14	15		9	10	27	40	28	6	319
Summer Tanager	45	13	5	24	122		27	37		4	33	5	63	45	10	433
Scarlet Tanager 4	16		7	28	14	74	11	12		3	7	48	1		1	230
Northern Cardinal 13	395	330	329	78	140	309	82	111		19	178	234	209	154	144	2725
Rose-br. Grosbeak 4	3	*	13	1	3	5	1	1				22		1	*	54

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
Blue Grosbeak		51	15	8	74	20	46	16	17	4	25	6	29	38	14	363
Indigo Bunting	6	170	14	88	129	93	246	36	44	22	28	105	58	52	47	1138
Painted Bunting													43	4		47
Dickcissel															1	
Eastern Towhee	39	114	148	89	40	23	106	46	44	5	74	89	92	41	52	1002
Bachman's Sparrow							2				2		15		19	
Chipping Sparrow	2	70	115	68	44	52	124	31	97	7	59	31	1	13	42	756
Field Sparrow	1	32	82	22	51	30	55	10	54	19	20	13		16	12	417
Savannah Sparrow			21	1	15		3	1	10	5		2	2			60
Grasshopper Spar.		2	22	6	3	18		7	7	4		5		1	4	79
Henslow's Sparrow					5											5
Seaside Sparrow													1		1	1
Song Sparrow	20	1	37	77		17	7	2	3	3		45	2		4	218
Swamp Sparrow		1	40		3	1			3			7				55
White-thr. Sparrow		3	815	19	18	5	37	10	72	1	4	44		1	2	1031
White-cr. Sparrow			41	*			3			3		1				48
Dark-eyed Junco	24		4												*	28
Bobolink		55		100	670	95	20	2		20	8	3		70	120	1163
Red-w. Blackbird	1	107	133	88	126	35	101	75	80	17	62	85	757	72	86	1825
Eastern Meadowlark			33	35	81	140	65	17	71	20	40	10	5	23	64	620
Rusty Blackbird		16	6			3			2							11
Boat-tailed Grackle													243			243
Common Grackle	5	384	299	706	290	306	335	227	175	30	235	397	126	187	491	4193
Br.-headed Cowbird		99	103	79	78	20	94	77	102	4	42	83	94	37	34	946
Orchard Oriole		11	17	5	25	3	31	11	46	3	35	11	100	30	3	331
Baltimore Oriole		4	1	15		5	6	*	5			26				62
Purple Finch			8			2		1	3			*				14
House Finch	1	88	58	107	23	27	60	49	22	8	37	48		6	100	634
Pine Siskin	3		8	2			9		3		4					29
Am. Goldfinch																
Evening Grosbeak	7	219	263	405	46	82	217	84	44	9	82	184		38	28	1708
House Sparrow		51	45	82	40	34	31	88	32	9	37	25	9	24	35	542

Species	AVNC	CPNC	DUNC	GRNC	GVNC	ICNC	JLNC	RANC	RVNC	SHNC	SPNC	WSNC	CASC	CGSC	SPSC	TOTAL
No. of Species	55	117	132	135	131	108	125	106	115	83	123	126	150	111	95	230
No. of Individ.	436	6218	7860	8104	5260	3365	7429	3029	3919	668	3921	5738	10317	2946	3570	72780
Total Field Hrs.	11.5	115	83.5	106.3	43.25	39.5	125.8	39	60.5	8.75	61.5	90.25	65.75	41.8	63	955.35
Hours on foot	5	85	62.5	65.25	31	13	91.5	35.5	30.25	1.75	30	80.5	25.5	25.3	35.5	617.55
Hours by car	6.5	30	21	41	10	26.5	30.25	3.5	30.25	7	31.5	9.75	24.5	16.5	21.5	309.75
Hours by boat							4						9.25		1	14.25
Hours by golf cart													6.5			6.5
Hours Owling		1.5	2	1.5	2.25		4.5	1	1.25		2	3.25	2	2	5	28.25
Total Field mi.	59.5	318.5	259	457.5	299	249	336.7	75	317	57	319.5	130	316.5	192.5	348.5	3735.2
Miles on foot	3.5	55.5	51	49	17	13	62.5	30	24.5	2	20.5	39.5	18.5	16.5	34.5	437.5
Miles by car	56	263	208	408.5	282	236	207.2	45	292.5	55	299	90.5	271	176	305	3194.7
Miles by boat							4						21		4	29
Miles by golf cart													6			6
Miles Owling	2	1	1	12.5	5-May	5-May	5-May	11-May	27-Apr	2-May	5-May	4-May	5-May	10	5	82.35
Date	11-May	11-May	21-Apr	4-May	5-May	5-May	5-May	11-May	27-Apr	2-May	5-May	4-May	5-May	4-May	11-May	

* indicates species was not seen on Count Day, but was seen during Count Week.

Spring 1996 North American Migration Count in South Carolina

Robin M. Carter
4165 E. Buchanan
Columbia, SC 29206

The 1996 Spring North American Migration Count in South Carolina was held on the second Saturday in May (11 May 1996). Counts were held in 18 of the 46 counties of the state, up from 16 counts in 1995 and 13 county counts in 1994. Counties holding counts in 1996 (by geographic region, with county seat) were:

Coastal and Outer Coastal Plain:

Horry	(Conway)
Georgetown	(Georgetown)
Charleston	(Charleston)
Colleton	(Walterboro)
Jasper	(Ridgeland)

Inner Coastal Plain:

Hampton	(Hampton)
Sumter	(Sumter)
Williamsburg	(Kingstree)

Piedmont and Inner Coastal Plain (i.e. Fall Line area):

Aiken	(Aiken)
Lexington	(Lexington)
Richland	(Columbia)
Kershaw	(Camden)

Piedmont:

Spartanburg	(Spartanburg)
Cherokee	(Gaffney)

Chester (Chester)
Fairfield (Winnsboro)

Mountains and Piedmont:

Oconee (Walhalla)
Pickens (Pickens)

Rarities and high counts:

Aiken County turned up 2 Common Ground-Doves, an unusual species so far inland. These birds might be part of a small local permanent population. As usual Charleston County, with 32 observers in the field, was the best organized count in the state. Charleston counters turned in good numbers of many species, including 458 White Ibis, 508 Least Terns, and 2 late Eastern Phoebes. Details on a Ringed Turtle-Dove in Charleston do not rule out Eurasian Collared-Dove.

Cherokee County counters found a late Purple Finch. The 3 Barn Owls in Chester County were at a long-time stakeout. Probably the most unusual thing in Chester County was that the counters did not encounter a single Carolina Chickadee all day!

Count participants in Colleton County found 5 Black Terns at Bear Island WMA. The terns had been present for more than a week. This species is extremely rare anywhere on land in South Carolina in May. In Fairfield County Donna and Buddy Bailey turned in a fine one-party total of 82 species. The 71 species found by counters in Georgetown County is far short of the potential of this coastal county. Most Georgetown County counters were also working in adjacent Horry County, so neither county got a full day's coverage.

A one-party count in Hampton County turned up 105 Little Blue Herons and 1247 White Ibis, mostly at the mixed rookery at Buckfield Plantation near Yemassee. A glance at the species found in Hampton County reminds us just how close to Florida this part of South Carolina is: Anhinga, Wood Stork, Swallow-tailed Kite, Mississippi Kite, Bald Eagle, Purple Gallinule, Common Ground-Dove, Red-cockaded Woodpecker, and Painted Bunting are species to be expected in Hampton County, and do not merit bold-face type.

Rarities in Horry County included a Least Flycatcher and a Veery. The species total for this coastal county would have been well over 100 if counters had not also covered adjacent Georgetown County. Jasper County includes figures from the Savannah spoil area, a shorebird migration hot spot of global significance. As a result Jasper counters turned in incredible high counts -- 347 Black-necked Stilts, 1908 Semipalmated Sandpipers, and 3433 Least

Sandpipers being most spectacular. The Jasper County Louisiana Waterthrush, if correctly identified, is quite unusual so close to the coast. It was most likely a Northern Waterthrush.

Bob Wood and company turned up quite a few goodies in Kershaw County. High counts included 121 Snowy Egrets, 510 Cattle Egrets, and 200 White Ibis, all at the mixed heronry at Boykin Mill Pond. Other goodies in Kershaw County included 2 Red-cockaded Woodpeckers (locally rare), a Gray-cheeked Thrush, a late Song Sparrow, and a rare and late Evening Grosbeak. In Lexington County the best birds were a late Red-breasted Nuthatch and 3 late Purple Finches, reported by Terry Huntsberger.

In Oconee County counters found a resident Mute Swan (present for years), part of a local feral population. Other birds of interest included all three species of nuthatch, all of which breed or probably breed in the county. How many other counties in the eastern United States have three breeding nuthatch species? Pickens County was the other mountain county with good coverage. Birders in Pickens turned up a late Northern Harrier, a late Veery, 10 Swainson's Warblers, 109 Indigo Buntings, and a late Purple Finch. Notice that birders in Pickens County reported 21 species of warbler, remarkable on such a late date.

In Richland County birders found a number of goodies, including a Barn Owl and 4 Dickcissels. The Dickcissels were apparently breeding in a huge fallow field and were seen by dozens of birders in May and early June. Spartanburg County must have set some sort of record for late winter birds on a South Carolina migration county. Goodies there included a Yellow-bellied Sapsucker, 2 Brown Creepers, and an American Pipit. Spartanburg also turned up a Barn Owl and a Dickcissel. Counters in Williamsburg County found nothing unusual.

In Sumter County Irvin Pitts and Terry Hurley spent the day birding Poinsett State Park on foot and found 42 species. They did not find anything rare, but this is a nice total for one small area with a limited variety of habitats.

Aiken County, SC. (Piedmont and Inner Coastal Plain)

6:30 AM to 7:30 PM. Temp. 64° to 85° F. Wind SE to SW, 5 to 15 mph. AM mostly clear; PM partly cloudy. Regular observers: 11 in field in 5 parties. Total regular party-hours 44.5; total regular party-miles 229; 29.5 hours and 11 miles on foot; 15 hours and 218 miles by car. Totals: 44.5 party-hours; 229 party-miles; 11 participants.

Double-crested Cormorant 4, Anhinga 3, Great Blue Heron 18, Great Egret 7, Cattle Egret 2, Green Heron 3, Canada Goose 50, Wood Duck 30, Mallard 4,

Hooded Merganser 5, Black Vulture 11, Turkey Vulture 39, Mississippi Kite 10, Bald Eagle 2 (adult), Red-shouldered Hawk 4, Red-tailed Hawk 10, Wild Turkey 5, Northern Bobwhite 25, Killdeer 3, Spotted Sandpiper 1, Rock Dove 32, Mourning Dove 113, Common Ground-Dove 2, Yellow-billed Cuckoo 7, Eastern Screech-Owl 1, Barred Owl 3, -will's-widow 1, Whip-poor-will 1, Chimney Swift 56, Ruby-throated Hummingbird 5, Belted Kingfisher 1, Red-headed Woodpecker 17, Red-bellied Woodpecker 29, Downy Woodpecker 9, Hairy Woodpecker 2, Northern (Yellow-shafted) Flicker 3, Pileated Woodpecker 19, Eastern Wood- Pewee 16, Acadian Flycatcher 27, Eastern Phoebe 1, Great Crested Flycatcher 33, Eastern Kingbird 28, Purple Martin 15, Northern Rough-winged Swallow 10, Barn Swallow 9, Blue Jay 39, American Crow 86, Fish Crow 27, crow sp. 11, Carolina Chickadee 35, Tufted Titmouse 42, White-breasted Nuthatch 2, Brown-headed Nuthatch 10, Carolina Wren 57, Blue-gray Gnatcatcher 32, Eastern Bluebird 56, Wood Thrush 3, American Robin 13, Gray Catbird 4, Northern Mockingbird 81, Brown Thrasher 15, Cedar Waxwing 139, Loggerhead Shrike 17, European Starling 65, White-eyed Vireo 29, Yellow-throated Vireo 3, Red-eyed Vireo 14, Northern Parula 53, Yellow Warbler 3, Yellow-rumped (Myrtle) Warbler 1, Yellow-throated Warbler 12, Pine Warbler 39, Prairie Warbler 8, Black-and-white Warbler 2, American Redstart 3, Prothonotary Warbler 20, Worm-eating Warbler 1, Swainson's Warbler 1, Ovenbird 1, Louisiana Waterthrush 1, Kentucky Warbler 7, Common Yellowthroat 14, Hooded Warbler 12, Yellow-breasted Chat 7, Summer Tanager 30, Northern Cardinal 151, Blue Grosbeak 11, Indigo Bunting 58, Painted Bunting 3, Eastern Towhee 46, Bachman's Sparrow 2, Chipping Sparrow 13, Field Sparrow 4, Red-winged Blackbird 39, Eastern Meadowlark 19, Common Grackle 107, Brown-headed Cowbird 33, blackbird sp. 7, Orchard Oriole 13, House Finch 33, American Goldfinch 10, House Sparrow 33.

Total: 100 species; 2253 individuals.

Coordinator: Anne Waters, 1621 Apple Valley Drive, Augusta, GA 30906.

Participants: Joanne Cartwright, Carol Eldridge, Larry Eldridge, Christine Huzella, Sandra Johnson, Paul Koehler, Richard Lux, Ned Shuler, Teddy Shuler, Anne Waters, Vernon Waters.

Charleston County, SC. (Coastal and Outer Coastal Plain)

3:30 AM to 11 PM. Temp. 60° to 85° F. Wind W, 0 - 15 mph. AM partly cloudy; PM partly cloudy. Regular observers: 32 in field in 10 parties. Total regular party-hours 85.5; total regular party-miles 330; 54.5 hours and 30

miles on foot; 24 hours and 283 miles by car; 7 hours and 10 miles by bicycle. Owling observers: 8 in 5 parties. Owling party-hours 5; owling party-miles 9. Feeder watchers: 9 at 8 feeding stations. Feeder watcher hours 29.5. Totals: 120 party-hours; 339 party-miles, 32 participants.

Common Loon 4, Pied-billed Grebe 2, Brown Pelican 172, Double-crested Cormorant 115, Anhinga 46, Least Bittern 1, Great Blue Heron 30, Great Egret 346, Snowy Egret 535, Little Blue Heron 288, Tricolored Heron 224, Cattle Egret 205, Green Heron 56, Black-crowned Night-Heron 9, Yellow-crowned Night-Heron 6, White Ibis 458, Glossy Ibis 15, Wood Stork 7, Canada Goose 24, Wood Duck 90, Mottled Duck 11, Mallard 17, Blue-winged Teal 15, Black Vulture 60, Turkey Vulture 209, Osprey 35, Swallow-tailed Kite 5, Mississippi Kite 18, Bald Eagle 5 (2 adult, 3 im.), Red-shouldered Hawk 17, Broad-winged Hawk 1, Red-tailed Hawk 20, American Kestrel 3, Wild Turkey 12, Northern Bobwhite 1, Clapper Rail 15, King Rail 1, Virginia Rail 1, Common Moorhen 62, American Coot 18, Black-bellied Plover 12, Wilson's Plover 3, Semipalmated Plover 61, Killdeer 27, American Oystercatcher 12, Black-necked Stilt 18, Greater Yellowlegs 3, Lesser Yellowlegs 3, Willet 17, Spotted Sandpiper 3, Whimbrel 41, Ruddy Turnstone 22, Red Knot 215, Sanderling 103, Western Sandpiper 37, Least Sandpiper 6, peep sp. 25, Dunlin 25, Short-billed Dowitcher 15, dowitcher sp. 26, Laughing Gull 481, Ring-billed Gull 19, Herring Gull 8, Great Black-backed Gull 1, Gull-billed Tern 6, Caspian Tern 3, Royal Tern 195, Sandwich Tern 4, Common Tern 2, Forster's Tern 6, Least Tern 518, Black Skimmer 151, Rock Dove 78, Mourning Dove 600, Common Ground -Dove 5, Black-billed Cuckoo 7, Yellow-billed Cuckoo 35, Barn Owl 1, Eastern Screech- Owl 5, Great Horned Owl 2, Barred Owl 12, Common Nighthawk 2, Chuck- will's-widow 73, Whip-poor-will 10, Chimney Swift 237, Ruby-throated Hummingbird 16, Belted Kingfisher 3, Red-headed Woodpecker 66, Red-bellied Woodpecker 120, Downy Woodpecker 25, Hairy Woodpecker 5, Red-cockaded Woodpecker 3, Northern (Yellow-shafted) Flicker 6, Pileated Woodpecker 23, Eastern Wood-Pewee 33, Acadian Flycatcher 36, Eastern Phoebe 2, Great Crested Flycatcher 328, Eastern Kingbird 27, Purple Martin 987, Tree Swallow 153, Northern Rough-winged Swallow 4, Barn Swallow 162, Blue Jay 109, American Crow 70, Fish Crow 102, crow sp. 75, Carolina Chickadee 352, Tufted Titmouse 125, White-breasted Nuthatch 9, Brown-headed Nuthatch 22, Carolina Wren 121, Marsh Wren 10, Blue-gray Gnatcatcher 69, Eastern Bluebird 38, Veery 1, Wood Thrush 21, American Robin 15, Gray Catbird 4, Northern Mockingbird 150, Brown Thrasher 111, Cedar Waxwing 46, Loggerhead Shrike 17, European Starling 361, White-eyed Vireo 118,

Yellow-throated Vireo 21, Red-eyed Vireo 52, Northern Parula 68, Yellow Warbler 1, Black-throated Green Warbler 2, Yellow-throated Warbler 65, Pine Warbler 68, Prairie Warbler 43, Palm Warbler 2, Black-and-white Warbler 1, Prothonotary Warbler 48, Worm-eating Warbler 7, Swainson's Warbler 2, Ovenbird 8, Kentucky Warbler 16, Common Yellowthroat 53, Hooded Warbler 32, Yellow-breasted Chat 19, Summer Tanager 65, Northern Cardinal 327, Blue Grosbeak 30, Indigo Bunting 68, Painted Bunting 67, Eastern Towhee 127, Bachman's Sparrow 9, Chipping Sparrow 14, Field Sparrow 2, White-throated Sparrow 5, Red-winged Blackbird 724, Boat-tailed Grackle 569, Common Grackle 535, Brown-headed Cowbird 87, Orchard Oriole 62, Baltimore Oriole 2, House Finch 32, American Goldfinch 17, House Sparrow 26.

Total: 159 species; 13,515 individuals.

Coordinator: Perry Nugent, 2260 Dallerton Circle, Charleston, SC 29414.

Participants: Van Atkins, Mike Aldenderfer, Dale Anderson, Gifford Beaton, Marvin Bouknight, Carl Broadwell, Sharon Brown, Joan Cole, Edward Conradi, Dave Elliott, Dennis Forsythe, Peggylee Fulmer, Holly Hartis, Tom Herbert, Tom Hilton, John Huggen, Joan Hylander, Ann Kent, Liz King, Ann Knight, John McAnew, Perry Nugent, Betsy Ristizh, Ben Smith, Joe Stevenot, Martha Stevenot, Betty Stringfellow, Russ Thompson, Scott Treml, Charles Walters, Robert Yarbrough, Betty Zimmerman.

Cherokee County, SC. (Piedmont)

6:00 AM to 6:00 PM. Temp 65° to 75° F. Wind W, 0 to 5 mph. AM cloudy; PM light rain. Regular observers: 5 in field in 3 parties. Total regular party-hours 11; total regular party-miles 52; 6 hours and 10 miles on foot; 5 hours and 42 miles by car. Owling observers: 2 in 1 party. Owling party-hours 0.5; owling party- miles 0.5. Totals: 11.5 party-hours; 52.5 party-miles, 5 participants.

Green Heron 3, Canada Goose 12, Mallard 5, Turkey Vulture 2, Osprey 1, Cooper's Hawk 1, Northern Bobwhite 7, Killdeer 1, Mourning Dove 69, Chuck-will's-widow 4, Chimney Swift 53, Belted Kingfisher 1, Red-bellied Woodpecker 2, Downy Woodpecker 2, Hairy Woodpecker 1, Northern (Yellow-shafted) Flicker 2, Pileated Woodpecker 1, Eastern Wood-Pewee 2, Eastern Phoebe 1, Eastern Kingbird 4, Purple Martin 2, Barn Swallow 5, Blue Jay 106, American Crow 29, Carolina Chickadee 9, Tufted Titmouse 4, Brown-headed Nuthatch 4, Carolina Wren 4, Blue-gray Gnatcatcher 5, Eastern

Bluebird 17, American Robin 1, Gray Catbird 2, Northern Mockingbird 41, Brown Thrasher 25, Cedar Waxwing 37, European Starling 30, Red-eyed Vireo 2, Pine Warbler 2, Black-and-white Warbler 1, American Redstart 2, Common Yellowthroat 1, Yellow-breasted Chat 1, Summer Tanager 2, Northern Cardinal 34, Blue Grosbeak 1, Indigo Bunting 16, Eastern Towhee 4, Chipping Sparrow 3, Field Sparrow 4, Red-winged Blackbird 5, Eastern Meadowlark 10, Common Grackle 45, Brown-headed Cowbird 6, Orchard Oriole 2, Purple Finch 1, House Finch 2, American Goldfinch 7, House Sparrow 2.

Total: 58 species; 648 individuals.

Coordinator: Lyle Campbell, 126 Greengate Lane, Spartanburg, SC 29307.

Participants: J.B. Hines, Myra Hines, Alan Rose, Ed Wilde, Les Young.

Chester County, SC. (Piedmont)

5:55 AM to 2:45 PM. Temp 68° to 86° F. AM partly cloudy; PM light rain.

Regular observers: 3 in field in 2 parties. Total regular party-hours 19.75; total regular party-miles 222; 9.75 hours and 14 miles on foot; 10 hours and 208 miles by car. Owling observers: 2 in 1 party. Owling party-hours 1; owling party-miles 0. Totals: 20.75 party-hours; 222 party-miles, 3 participants.

Pied-billed Grebe 1, Double-crested Cormorant 5, Great Blue Heron 2, Green Heron 4, Canada Goose 11, Wood Duck 8, Mallard 11, Ring-necked Duck 3, Black Vulture 13, Turkey Vulture 20, Osprey 1, Bald Eagle 1 (adult), Red-shouldered Hawk 5, Red-tailed Hawk 5, American Kestrel 1, Wild Turkey 5, Northern Bobwhite 20, American Coot 1, Killdeer 3, Spotted Sandpiper 1, Rock Dove 3, Mourning Dove 58, Yellow-billed Cuckoo 4, Barn Owl 3, Barred Owl 3, Common Nighthawk 1, Chuck-will's-widow 5, Whip-poor-will 7, Chimney Swift 20, Belted Kingfisher 3, Red-bellied Woodpecker 7, Downy Woodpecker 1, Northern (Yellow-shafted) Flicker 1, Pileated Woodpecker 2, Eastern Wood-Pewee 2, Acadian Flycatcher 1, Eastern Phoebe 5, Great Crested Flycatcher 5, Eastern Kingbird 21, Purple Martin 57, Northern Rough-winged Swallow 4, Cliff Swallow 95, Barn Swallow 13, Blue Jay 8, American Crow 16, Fish Crow 2, Tufted Titmouse 9, Brown-headed Nuthatch 4, Carolina Wren 15, Blue-gray Gnatcatcher 6, Eastern Bluebird 29, American Robin 25, Gray Catbird 5, Northern Mockingbird 27, Brown Thrasher 15, Cedar Waxwing 50, Loggerhead Shrike 5, European Starling 128, White-eyed Vireo 3, Red-eyed Vireo 12, Tennessee Warbler 1, Northern Parula 6, Black-throated Blue Warbler 1, Yellow-throated Warbler 5, Pine Warbler 5,

Prairie Warbler 5, American Redstart 1, Prothonotary Warbler 2, Louisiana Waterthrush 1, Common Yellowthroat 1, Hooded Warbler 1, Yellow-breasted Chat 5, Summer Tanager 6, Northern Cardinal 23, Blue Grosbeak 13, Indigo Bunting 12, Eastern Towhee 6, Chipping Sparrow 12, Field Sparrow 8, Grasshopper Sparrow 4, Red-winged Blackbird 48, Eastern Meadowlark 70, Common Grackle 68, Brown-headed Cowbird 2, Orchard Oriole 2, American Goldfinch 6, House Sparrow 27.

Total: 87 species; 1142 individuals.

Coordinator: Albert Conway, 1672 Deer Run Road, Catawba, SC 29704.

Participants: Albert Conway, Gail B. Ice, Gail C. Ice.

Colleton County, SC. (Coastal and Outer Coastal Plain)

6:30 AM to 3:30 PM. Regular observers: 7 in field in 2 parties. Total regular party-hours 11.5; total regular party-miles 146.5; 1.5 hours and 1.5 miles on foot; 10 hours and 145 miles by car. Totals: 11.5 party-hours; 146.5 party-miles, 7 participants.

Pied-billed Grebe 3, Double-crested Cormorant 45, Anhinga 29, Least Bittern 1, Great Blue Heron 8, Great Egret 10, Snowy Egret 3, Little Blue Heron 2, Tricolored Heron 12, Cattle Egret 1, Green Heron 1, Wood Stork 12, Canada Goose 6, Wood Duck 2, Mottled Duck 10, Blue-winged Teal 1, Northern Shoveler 1, Black Vulture 35, Turkey Vulture 45, Osprey 3, Bald Eagle 6 (4 adult, 2 imm.), Northern Harrier 1, Red-shouldered Hawk 1, Red-tailed Hawk 3, Northern Bobwhite 6, Clapper Rail 4, King Rail 1, Common Moorhen 14, American Coot 2, Killdeer 4, Black-necked Stilt 20, Lesser Yellowlegs 8, Semipalmated Sandpiper 60, Least Sandpiper 10, Laughing Gull 10, Royal Tern 6, Forster's Tern 4, Least Tern 1, Black Tern 5, Eurasian Collared-Dove 2, Mourning Dove 30, Yellow-billed Cuckoo 11, Barred Owl 2, Belted Kingfisher 2, Red-headed Woodpecker 3, Red-bellied Woodpecker 19, Downy Woodpecker 1, Pileated Woodpecker 1, Eastern Wood-Pewee 20, Acadian Flycatcher 10, Great Crested Flycatcher 35, Eastern Kingbird 25, Purple Martin 25, Tree Swallow 40, Northern Rough-winged Swallow 4, Barn Swallow 10, Blue Jay 16, American Crow 10, Fish Crow 2, Carolina Chickadee 15, Tufted Titmouse 19, White-breasted Nuthatch 2, Carolina Wren 15, Marsh Wren 18, Blue-gray Gnatcatcher 9, Eastern Bluebird 8, Wood Thrush 4, Northern Mockingbird 13, Brown Thrasher 21, Loggerhead Shrike 3, European Starling 10, White-eyed Vireo 20, Red-eyed Vireo 7, Northern Parula 28, Yellow-throated Warbler 19, Pine Warbler 15, Blackpoll Warbler

4, Prothonotary Warbler 1, Kentucky Warbler 4, Common Yellowthroat 14, Hooded Warbler 6, Summer Tanager 14, Northern Cardinal 46, Blue Grosbeak 2, Indigo Bunting 11, Painted Bunting 6, Eastern Towhee 13, Seaside Sparrow 10, Red-winged Blackbird 56, Boat-tailed Grackle 25, Common Grackle 25, Brown-headed Cowbird 11, Orchard Oriole 8.

Total: 93 species; 1146 individuals.

Coordinator: Pete Laurie, 750 Copperhead Trail, Johns Island, SC 29455

Participants: Barbara Bokor, Lawrence Bokor, Katherine Doaks, Dennis Forsythe, Pete Laurie, Janice Reyes, Steve Reyes.

Fairfield County, SC. (Piedmont)

6:00 AM to 11:00 PM. Temp 64° to 86° F. Wind S, 0 to 20 mph. AM clear; PM cloudy. Regular observers: 2 in field in 1 party. Total regular party-hours 14.5; total regular party-miles 118.5; 8 hours and 3 miles on foot; 5 hours and 115 miles by car, 1.5 hours and 0.5 miles by boat. Owling observers: 2 in 1 party. Owling party-hours 2.5; owling party-miles 0. Totals: 17 party-hours; 118.5 party-miles, 2 participants.

Double-crested Cormorant 12, Great Blue Heron 2, Great Egret 3, Green Heron 3, Canada Goose 10, Wood Duck 1, Black Vulture 5, Turkey Vulture 28, Osprey 5, Cooper's Hawk 1, Red-shouldered Hawk 3, Red-tailed Hawk 1, Wild Turkey 1, Northern Bobwhite 2, Killdeer 1, Spotted Sandpiper 1, Ring-billed Gull 1, Rock Dove 3, Mourning Dove 31, Yellow-billed Cuckoo 5, Barred Owl 1, Chuck-will's-widow 3, Whip-poor-will 7, Chimney Swift 4, Ruby-throated Hummingbird 5, Belted Kingfisher 1, Red-bellied Woodpecker 6, Downy Woodpecker 2, Hairy Woodpecker 2, Northern (Yellow-shafted) Flicker 5, Pileated Woodpecker 3, Eastern Wood-Pewee 2, Acadian Flycatcher 5, Eastern Phoebe 3, Great Crested Flycatcher 10, Eastern Kingbird 11, Purple Martin 5, Northern Rough-winged Swallow 6, Cliff Swallow 21, Barn Swallow 9, Blue Jay 7, American Crow 21, Fish Crow 3, Carolina Chickadee 6, Tufted Titmouse 7, Brown-headed Nuthatch 8, Carolina Wren 3, Blue-gray Gnatcatcher 11, Eastern Bluebird 9, Wood Thrush 5, American Robin 3, Northern Mockingbird 6, Brown Thrasher 5, Cedar Waxwing 21, European Starling 4, White-eyed Vireo 5, Yellow-throated Vireo 1, Red-eyed Vireo 9, Northern Parula 5, Black-throated Blue Warbler 1, Yellow-throated Warbler 4, Pine Warbler 11, Prairie Warbler 3, Black-and-white Warbler 6, American Redstart 1, Prothonotary Warbler 2, Kentucky Warbler 6, Common Yellowthroat 3,

Hooded Warbler 2, Yellow-breasted Chat 7, Summer Tanager 9, Northern Cardinal 23, Indigo Bunting 1, Eastern Towhee 9, Chipping Sparrow 12, Red-winged Blackbird 18, Common Grackle 33, Brown-headed Cowbird 10, Orchard Oriole 6, House Finch 19, American Goldfinch 8, House Sparrow 2.

Total: 82 species; 565 individuals.

Coordinator: Donna Bailey, Rt. 3, Box 64 FH, Winnsboro, SC 29180.

Participants: Buddy Bailey, Donna Bailey.

Georgetown County, SC. (Coastal and Outer Coastal Plain)

9:30 AM to 7:00 PM. Wind NE, 10 mph. Partly cloudy. Regular observers: 5 in field in 3 parties. Total regular party-hours 14.25; total regular party-miles 14.5; 6.75 hours and 3.5 miles on foot; 2.5 hours and 6 miles by car; 5 hours and 5 miles by boat. Totals: 14.25 party-hours, 14.5 party-miles; 5 participants.

Brown Pelican 51, Double-crested Cormorant 16, Great Blue Heron 7, Great Egret 11, Snowy Egret 9, Tricolored Heron 3, Green Heron 1, White Ibis 1, Red-breasted Merganser 2, Turkey Vulture 1, Osprey 2, Bald Eagle 1 (imm.), Cooper's Hawk 1, Clapper Rail 2, Virginia Rail 1, Common Moorhen 1, Black-bellied Plover 52, Wilson's Plover 3, Semipalmated Plover 251, Killdeer 7, American Oystercatcher 10, Greater Yellowlegs 8, Willet 19, Whimbrel 13, Ruddy Turnstone 11, Sanderling 100, Semipalmated Sandpiper 200, Least Sandpiper 2, Dunlin 7, Short-billed Dowitcher 38, Laughing Gull 47, Ring-billed Gull 6, Herring Gull 1, Caspian Tern 23, Royal Tern 5, Sandwich Tern 1, Common Tern 6, Forster's Tern 2, Least Tern 9, Black Skimmer 3, Rock Dove 4, Mourning Dove 7, Common Ground-Dove 4, Chimney Swift 2, Belted Kingfisher 1, Red-headed Woodpecker 2, Red-bellied Woodpecker 1, Great Crested Flycatcher 2, Tree Swallow 2, Northern Rough-winged Swallow 6, Barn Swallow 11, Fish Crow 9, crow sp. 20, Carolina Chickadee 1, Tufted Titmouse 1, Carolina Wren 2, Marsh Wren 1, Blue-gray Gnatcatcher 2, Eastern Bluebird 1, Gray Catbird 1, Northern Mockingbird 4, European Starling 9, Northern Parula 2, Swainson's Warbler 1, Yellow-breasted Chat 1, Northern Cardinal 1, Red-winged Blackbird 22, Boat-tailed Grackle 5, Common Grackle 14, Brown-headed Cowbird 2, Orchard Oriole 1, House Sparrow 6.

Total: 71 species; 1082 individuals.

Coordinator: Jack Peachey, 103 Walnut Circle, Conway, SC 29526.

Participants: David Donmoyer, Jack Peachey, John Snow, Tonya Spires, Paula Sutton.

Hampton County, SC. (Inner Coastal Plain)

6:10 AM to 8:45 PM. Temp 68° to 89° F. Wind 0 to 15 mph. AM partly cloudy; PM partly cloudy. Regular observers: 2 in field in 1 party. Total regular party-hours 14.5; total regular party-miles 106.5; 8.5 hours and 4.5 miles on foot; 6 hours and 102 miles by car. Totals: 14.5 party-hours; 106.5 party-miles, 2 participants.

Double-crested Cormorant 1, Anhinga 9, Great Blue Heron 5, Great Egret 33, Snowy Egret 1, Little Blue Heron 105, Tricolored Heron 3, Cattle Egret 22, Green Heron 4, Yellow-crowned Night-Heron 1, White Ibis 1247, Wood Stork 3, Canada Goose 4, Wood Duck 6, Black Vulture 13, Turkey Vulture 37, Osprey 1, Swallow-tailed Kite 4, Mississippi Kite 5, Bald Eagle 1 (adult), Red-shouldered Hawk 3, Red-tailed Hawk 2, Northern Bobwhite 5, Purple Gallinule 2, Common Moorhen 2, American Coot 1, Forster's Tern 2, Mourning Dove 19, Common Ground-Dove 1, Great Horned Owl 1, Common Nighthawk 2, Chuck-will's-widow 2, Chimney Swift 17, Ruby-throated Hummingbird 2, Red-headed Woodpecker 4, Red-bellied Woodpecker 10, Red-cockaded Woodpecker 3, Pileated Woodpecker 4, Eastern Wood-Pewee 3, Great Crested Flycatcher 17, Eastern Kingbird 8, Purple Martin 4, Northern Rough-winged Swallow 3, Barn Swallow 12, Blue Jay 8, American Crow 8, Fish Crow 7, crow sp. 35, Carolina Chickadee 2, Tufted Titmouse 5, Brown-headed Nuthatch 4, Carolina Wren 3, Blue-gray Gnatcatcher 12, Eastern Bluebird 19, Gray Catbird 5, Northern Mockingbird 34, Brown Thrasher 6, Loggerhead Shrike 6, European Starling 18, White-eyed Vireo 3, Red-eyed Vireo 1, Northern Parula 2, Pine Warbler 2, American Redstart 1, Prothonotary Warbler 3, Common Yellowthroat 3, Yellow-breasted Chat 1, Summer Tanager 4, Northern Cardinal 13, Blue Grosbeak 6, Indigo Bunting 4, Painted Bunting 1, Eastern Towhee 3, Chipping Sparrow 4, Bobolink 2, Red-winged Blackbird 14, Common Grackle 59, Brown-headed Cowbird 3, Orchard Oriole 3.

Total: 78 species; 1938 individuals.

Coordinator: Carroll Richard, P.O. Box 893, Hampton, SC 29924.

Participants: Carroll Richard, Bob Richard.

Horry County, SC. (Coastal and Outer Coastal Plain)

5:50 AM to 1:30 PM. Temp 65° to 85° F. Wind S, 0 to 20 mph. AM partly cloudy; PM partly cloudy. Regular observers: 9 in field in 2 parties. Total regular party-hours 12; total regular party-miles 87; 7 hours and 2 miles on foot; 5 hours and 85 miles by car. Owling observers: 1 in 1 party. Owling party-hours 3; owling party-miles 0. Totals: 15 party-hours; 87 party-miles, 10 participants.

Great Blue Heron 2, Great Egret 5, Little Blue Heron 1, Green Heron 3, White Ibis 105, Wood Duck 2, American Black Duck 12, Mallard 26, Black Vulture 1, Turkey Vulture 9, Osprey 5, Swallow-tailed Kite 1, Red-shouldered Hawk 3, Red-tailed Hawk 5, Wild Turkey 8, Northern Bobwhite 1, Killdeer 9, Ruddy Turnstone 2, Sanderling 3, Laughing Gull 2, Ring-billed Gull 5, Least Tern 3, Rock Dove 18, Mourning Dove 52, Yellow-billed Cuckoo 12, Common Nighthawk 2, Chuck-will's-widow 1, Whip-poor-will 1, Chimney Swift 10, Ruby-throated Hummingbird 6, Belted Kingfisher 1, Red-headed Woodpecker 7, Red-bellied Woodpecker 8, Downy Woodpecker 4, Red-cockaded Woodpecker 1, Northern (Yellow-shafted) Woodpecker 2, Pileated Woodpecker 3, Eastern Wood-Pewee 5, Acadian Flycatcher 7, Least Flycatcher 1, Great Crested Flycatcher 14, Eastern Kingbird 10, Purple Martin 25, Tree Swallow 6, Barn Swallow 27, Blue Jay 19, American Crow 2, Fish Crow 16, crow sp. 32, Carolina Chickadee 17, Tufted Titmouse 30, White-breasted Nuthatch 5, Brown-headed Nuthatch 5, Carolina Wren 12, Blue-gray Gnatcatcher 20, Eastern Bluebird 13, Veery 1, Wood Thrush 3, American Robin 3, Gray Catbird 7, Northern Mockingbird 27, Brown Thrasher 16, Cedar Waxwing 1, Loggerhead Shrike 6, European Starling 39, White-eyed Vireo 6, Yellow-throated Vireo 2, Red-eyed Vireo 5, Northern Parula 17, Yellow Warbler 2, Yellow-rumped (Myrtle) Warbler 1, Yellow-throated Warbler 12, Pine Warbler 13, Prairie Warbler 6, Prothonotary Warbler 14, Worm-eating Warbler 1, Swainson's Warbler 2, Ovenbird 1, Common Yellowthroat 5, Hooded Warbler 2, Yellow-breasted Chat 3, Summer Tanager 10, Northern Cardinal 38, Blue Grosbeak 11, Indigo Bunting 9, Eastern Towhee 12, Red-winged Blackbird 9, Boat-tailed Grackle 1, Common Grackle 54, Brown-headed Cowbird 13, Orchard Oriole 9, House Finch 3, American Goldfinch 6, House Sparrow 17.

Total: 93 species; 994 individuals.

Coordinator: Tonya Spires, P.O. Box 2167, Conway, SC 29526.

Participants: Pauline Bock, David Donmoyer, Ann Malys, Jack Peachey, Tonya Spires, Evie Schwarz, Steve Thomas, Phil Turner, Sharon Turner, Mark Wilson.

Jasper County, SC. (Coastal and Outer Coastal Plain)

5:15 AM to 7:45 PM. Temp 59° to 80° F. Wind NW, 5 to 15 mph. AM fog; PM partly cloudy. Regular observers: 10 in field in 5 parties. Total regular party-hours 46; total regular party-miles 117.5; 18 hours and 7.5 miles on foot; 28 hours and 110 miles by car. Feeder watchers: 1 at 1 feeding station. Feeder watcher hours 6. Totals: 52 party-hours; 117.5 party-miles, 11 participants.

Brown Pelican 1, Double-crested Cormorant 23, Anhinga 40, Least Bittern 14, Great Blue Heron 24, Great Egret 97, Snowy Egret 119, Little Blue Heron 6, Tricolored Heron 49, Cattle Egret 77, Green Heron 45, Black-crowned Night-Heron 1, White Ibis 353, Glossy Ibis 5, Wood Duck 70, American Black Duck 9, Mottled Duck 32, Mallard 3, Blue-winged Teal 17, Ruddy Duck 3, Black Vulture 17, Turkey Vulture 57, Osprey 3, Swallow-tailed Kite 1, Mississippi Kite 2, Sharp-shinned Hawk 2, Red-shouldered Hawk 3, Red-tailed Hawk 1, Wild Turkey 6, Northern Bobwhite 9, Clapper Rail 7, King Rail 4, Sora 1, Purple Gallinule 9, Common Moorhen 91, American Coot 44, Black-bellied Plover 15, Wilson's Plover 1, Semipalmated Plover 187, Killdeer 35, Black-necked Stilt 347, American Avocet 39, Greater Yellowlegs 1, Lesser Yellowlegs 45, Solitary Sandpiper 2, Willet 12, Spotted Sandpiper 2, Sanderling 1, Semipalmated Sandpiper 1908, Western Sandpiper 13, Least Sandpiper 3433, peep sp. 400, Dunlin 5, Stilt Sandpiper 92, dowitcher sp. 11, Laughing Gull 1, Bonaparte's Gull 2, Gull-billed Tern 2, Caspian Tern 2, Royal Tern 15, Forster's Tern 4, Least Tern 91, Rock Dove 40, Mourning Dove 103, Yellow-billed Cuckoo 7, Great Horned Owl 1, Common Nighthawk 6, Chimney Swift 65, Ruby-throated Hummingbird 10, Belted Kingfisher 3, Red-bellied Woodpecker 19, Downy Woodpecker 1, Pileated Woodpecker 17, Eastern Wood-Pewee 1, Great Crested Flycatcher 22, Eastern Kingbird 56, Tree Swallow 6, Northern Rough-winged Swallow 4, Bank Swallow 1, Barn Swallow 67, Blue Jay 28, American Crow 50, Fish Crow 21, Carolina Chickadee 10, Tufted Titmouse 23, Brown-headed Nuthatch 7, Carolina Wren 35, Marsh Wren 24, Blue-gray Gnatcatcher 10, Eastern Bluebird 10, Wood Thrush 4, American Robin 3, Gray Catbird 7, Northern Mockingbird 39, Brown Thrasher 42, European Starling 20, White-eyed Vireo 15, Red-eyed Vireo 9, Northern Parula 29, Yellow Warbler 1, Yellow-rumped (Myrtle) Warbler 2, Yellow-throated Warbler 2, Pine Warbler 4, American Redstart 1, Prothonotary Warbler 11, Louisiana Waterthrush 1, Common Yellowthroat 38,

Hooded Warbler 2, Yellow-breasted Chat 1, Summer Tanager 5, Scarlet Tanager 2, Northern Cardinal 51, Blue Grosbeak 1, Indigo Bunting 8, Painted Bunting 24, Eastern Towhee 15, Savannah Sparrow 14, Swamp Sparrow 2, Bobolink 269, Red-winged Blackbird 595, Boat-tailed Grackle 370, Common Grackle 51, Brown-headed Cowbird 10, Orchard Oriole 9.

Total: 123 species; 10,219 individuals.

Coordinator: Patricia E. Metz, 7 Beneta Court, Savannah, GA 31406.

Participants: Matthew Bryant, Vic Carpenter, Nancy Drake, Don Kepler, Barry Lowes, Philomena Lowes, Ella McCullough, Jim McCullough, John Metz, Patricia Metz, Tom Smith.

Kershaw County, SC. (Piedmont and Inner Coastal Plain)

6:10 AM to 7:30 PM. Temp. 75° to 80° F. Wind W, 0 - 20 mph. AM partly cloudy; PM partly cloudy. Regular observers: 5 in field in 1 party. Total regular party-hours 12.5; total regular party-miles 141; 1 hour and 1 mile on foot; 11.5 hours and 140 miles by car. Feeder watchers: 5 at 1 feeding station. Feeder watcher hours 1. Totals: 13.5 party-hours; 141 party-miles, 6 participants.

Double-crested Cormorant 7, Anhinga 31, Least Bittern 1, Great Blue Heron 7, Great Egret 34, Snowy Egret 121, Little Blue Heron 20, Cattle Egret 510, Green Heron 4, Black-crowned Night-Heron 2, White Ibis 200, Wood Duck 22, Mallard 3, Black Vulture 20, Turkey Vulture 47, Red-shouldered Hawk 3, Red-tailed Hawk 1, Northern Bobwhite 10, Common Moorhen 1, American Coot 1, Killdeer 5, Rock Dove 17, Mourning Dove 64, Yellow-billed Cuckoo 2, Chimney Swift 81, Belted Kingfisher 1, Red-headed Woodpecker 2, Red-bellied Woodpecker 22, Downy Woodpecker 2, Red-cockaded Woodpecker 2, Northern (Yellow-shafted) Flicker 1, Pileated Woodpecker 5, Eastern Wood-Pewee 3, Acadian Flycatcher 3, Eastern Phoebe 1, Great Crested Flycatcher 39, Eastern Kingbird 6, Horned Lark 1, Purple Martin 6, Northern Rough-winged Swallow 12, Bank Swallow 2, Cliff Swallow 10, Barn Swallow 51, Blue Jay 12, American Crow 24, Fish Crow 15, Carolina Chickadee 37, Tufted Titmouse 16, White-breasted Nuthatch 1, Brown-headed Nuthatch 5, Carolina Wren 23, Blue-gray Gnatcatcher 28, Eastern Bluebird 65, Gray-cheeked Thrush 1, Wood Thrush 2, American Robin 2, Gray Catbird 2, Northern Mockingbird 12, Brown Thrasher 18, Loggerhead Shrike 7, European Starling 45, Red-eyed Vireo 12, Northern Parula 2, Yellow-throated Warbler 3, Pine Warbler 9, Prairie Warbler 6, Black-and-white Warbler 2,

American Redstart 1, Prothonotary Warbler 2, Ovenbird 5, Northern Waterthrush 1, Common Yellowthroat 10, Yellow-breasted Chat 7, Summer Tanager 22, Scarlet Tanager 1, Northern Cardinal 62, Blue Grosbeak 1, Indigo Bunting 28, Eastern Towhee 24, Bachman's Sparrow 1, Chipping Sparrow 2, Song Sparrow 1, Swamp Sparrow 1, Red-winged Blackbird 11, Eastern Meadowlark 8, Common Grackle 26, Brown-headed Cowbird 16, Orchard Oriole 4, House Finch 4, Evening Grosbeak 1, House Sparrow 6.

Total: 91 species; 1977 individuals.

Coordinator: Bob Wood, 117 Michael Road, Blythewood, SC 29016.

Participants: Frances Lewis, Marilyn Roll, Walter Roll, Betty Rudd, Erlene Vaughan, Bob Wood.

Lexington County, SC. (Piedmont and Inner Coastal Plain)

6:00 AM to 9:00 PM. Temp 70° to 80° F. Wind W, 0 - 10 mph. AM clear; PM partly cloudy. Regular observers: 3 in field in 3 parties. Total regular party-hours 16; total regular party-miles 53; 10 hours and 3 miles on foot, 6 hours and 50 miles by car. Owling observers: 1 in 1 party. Owling party-hours 0.75; owling party-miles 1. Totals: 16.75 party-hours; 54 party-miles, 3 participants.

Green Heron 2, Canada Goose 17, Wood Duck 1, Mallard 17, Turkey Vulture 3, Broad-winged Hawk 1, Red-tailed Hawk 2, Northern Bobwhite 1, Killdeer 12, Mourning Dove 31, Yellow-billed Cuckoo 3, Eastern Screech-Owl 2, Chuck-will's-widow 4, Chimney Swift 20, Ruby-throated Hummingbird 5, Red-headed Woodpecker 1, Red-bellied Woodpecker 14, Downy Woodpecker 3, Northern (Yellow-shafted) Flicker 3, Pileated Woodpecker 3, Eastern Wood-Pewee 1, Acadian Flycatcher 2, Great Crested Flycatcher 13, Eastern Kingbird 11, Purple Martin 12, Northern Rough-winged Swallow 3, Barn Swallow 11, Blue Jay 14, American Crow 47, Fish Crow 15, Carolina Chickadee 15, Tufted Titmouse 23, Red-breasted Nuthatch 1, Brown-headed Nuthatch 13, Carolina Wren 15, Blue-gray Gnatcatcher 4, Eastern Bluebird 10, Wood Thrush 1, American Robin 15, Gray Catbird 7, Northern Mockingbird 29, Brown Thrasher 19, Loggerhead Shrike 5, European Starling 24, White-eyed Vireo 3, Yellow-throated Vireo 1, Red-eyed Vireo 2, Black-throated Blue Warbler 2, Pine Warbler 9, Prairie Warbler 2, Blackpoll Warbler 1, American Redstart 1, Prothonotary Warbler 2, Ovenbird 4, Kentucky Warbler 1, Common Yellowthroat 3, Hooded Warbler 1, Yellow-breasted Chat 3, Summer Tanager 5, Scarlet Tanager 1, Northern Cardinal 39, Blue

Grosbeak 2, Indigo Bunting 5, Eastern Towhee 11, Red-winged Blackbird 18, Eastern Meadowlark 4, Common Grackle 18, Brown-headed Cowbird 8, Orchard Oriole 1, Purple Finch 3, House Finch 40.

Total: 71 species; 645 individuals.

Coordinator: Robin Carter, 4165 East Buchanan Drive, Columbia, SC 29206.
Participants: Molly Bonnell, Jerry Griggs, Terry Huntsberger.

Oconee County, SC. (Mountains and Piedmont)

6:30 AM to 7:30 PM. Temp 65° to 75° F. Wind NW, 5 to 10 mph. AM light rain; PM light rain. Regular observers: 8 in field in 3 parties. Total regular party-hours 27; total regular party-miles 287; 10 hours and 5 miles on foot; 17 hours and 282 miles by car. Totals: 27 party-hours; 287 party-miles, 8 participants.

Double-crested Cormorant 1, Great Blue Heron 2, Mute Swan 1, Canada Goose 23, Wood Duck 9, Mallard 7, Black Vulture 5, Turkey Vulture 15, Cooper's Hawk 1, Accipiter sp. 1, Red-shouldered Hawk 1, Broad-winged Hawk 3, Red-tailed Hawk 2, Northern Bobwhite 1, Killdeer 1, Spotted Sandpiper 3, Ring-billed Gull 17, Rock Dove 10, Mourning Dove 45, Chimney Swift 63, Ruby-throated Hummingbird 4, Belted Kingfisher 6, Red-bellied Woodpecker 9, Downy Woodpecker 6, Northern (Yellow-shafted) Flicker 1, Pileated Woodpecker 8, Eastern Wood-Pewee 2, Acadian Flycatcher 2, Eastern Phoebe 23, Great Crested Flycatcher 16, Eastern Kingbird 7, Purple Martin 22, Northern Rough-winged Swallow 32, Cliff Swallow 6, Barn Swallow 67, Blue Jay 32, American Crow 76, Fish crow 11, Carolina Chickadee 50, Tufted Titmouse 43, Red-breasted Nuthatch 2, White-breasted Nuthatch 4, Brown-headed Nuthatch 6, Carolina Wren 21, Blue-gray Gnatcatcher 38, Eastern Bluebird 65, Wood Thrush 2, American Robin 26, Gray Catbird 4, Northern Mockingbird 22, Brown Thrasher 17, Cedar Waxwing 23, Loggerhead Shrike 1, European Starling 90, White-eyed Vireo 4, Solitary Vireo 3, Yellow-throated Vireo 3, Red-eyed Vireo 40, Northern Parula 17, Yellow Warbler 3, Magnolia Warbler 2, Black-throated Blue Warbler 6, Black-throated Green Warbler 5, Blackburnian Warbler 1, Yellow-throated Warbler 4, Pine Warbler 9, Prairie Warbler 13, Black-and-white Warbler 1, American Redstart 8, Ovenbird 6, Louisiana Waterthrush 4, Kentucky Warbler 1, Common Yellowthroat 15, Hooded Warbler 7, Yellow-breasted Chat 19, Summer Tanager 3, Scarlet Tanager 4, Northern Cardinal 60, Blue Grosbeak 7, Indigo Bunting 91, Eastern Towhee 7, Chipping Sparrow 12, Field Sparrow 5,

Savannah Sparrow 1, Grasshopper Sparrow 1, Song Sparrow 5, Dark-eyed Junco 2, Red-winged Blackbird 20, Eastern Meadowlark 32, Common Grackle 67, Brown-headed Cowbird 12, Orchard Oriole 8, House Finch 10, American Goldfinch 47, House Sparrow 14.

Total: 94 species; 1534 individuals.

Coordinator: Steve Wagner, 316 East Creswell, Greenwood, SC 29646.

Participants: Don Cox, Steve Cox, Vicki Cox, Carla Hedder, David Hedder, Larry LeCroy, Steve Sheffield, Steve Wagner.

Pickens County, SC. (Mountains and Piedmont)

2:30 AM to 7:30 PM. Temp 60° to 75° F. Wind calm. AM partly cloudy; PM light rain. Regular observers: 5 in field in 2 parties. Total regular party-hours 24; total regular party-miles 214; 3.5 hours and 9 miles on foot; 20.5 hours and 205 miles by car. Owling observers: 2 in 1 party. Owling party-hours 3.5; owling party-miles 53. Totals: 27.5 party-hours; 258 party-miles; 5 participants.

Double-crested Cormorant 4, Great Blue Heron 1, Canada Goose 24, Wood Duck 17, Mallard 5, Black Vulture 5, Turkey Vulture 28, Northern Harrier 1, Broad-winged Hawk 3, Red-tailed Hawk 5, Northern Bobwhite 8, American Coot 1, Killdeer 2, Spotted Sandpiper 4, Rock Dove 6, Mourning Dove 35, Yellow-billed Cuckoo 9, Eastern Screech-Owl 1, Chuck-will's-widow 12, Whip-poor-will 7, Chimney Swift 93, Ruby-throated Hummingbird 3, Belted Kingfisher 2, Red-headed Woodpecker 3, Red-bellied Woodpecker 6, Downy Woodpecker 3, Hairy Woodpecker 1, Northern (Yellow-shafted) Flicker 3, Pileated Woodpecker 4, Eastern Wood-Pewee 3, Acadian Flycatcher 18, Eastern Phoebe 17, Great Crested Flycatcher 9, Eastern Kingbird 14, Purple Martin 6, Northern Rough-winged Swallow 33, Cliff Swallow 1, Barn Swallow 37, Blue Jay 22, American Crow 68, crow sp. 40, Carolina Chickadee 36, Tufted Titmouse 22, Brown-headed Nuthatch 4, Carolina Wren 25, Blue-gray Gnatcatcher 35, Eastern Bluebird 35, Veery 1, Wood Thrush 13, American Robin 52, Northern Mockingbird 32, Brown Thrasher 10, Cedar Waxwing 18, Loggerhead Shrike 1, European Starling 68, White-eyed Vireo 7, Solitary Vireo 5, Yellow-throated Vireo 2, Red-eyed Vireo 53, Blue-winged Warbler 1, Northern Parula 19, Chestnut-sided Warbler 1, Magnolia Warbler 3, Cape May Warbler 1, Black-throated Blue Warbler 10, Yellow-rumped (Myrtle) Warbler 2, Black-throated Green Warbler 9, Yellow-throated Warbler 5, Pine Warbler 13, Black-and-white Warbler 11, American Redstart 3, Worm-eating

Warbler 8, Swainson's Warbler 10, Ovenbird 13, Northern Waterthrush 1, Louisiana Waterthrush 3, Kentucky Warbler 2, Common Yellowthroat 7, Hooded Warbler 25, Yellow-breasted Chat 10, Summer Tanager 5, Scarlet Tanager 9, Northern Cardinal 49, Rose-breasted Grosbeak 1, Blue Grosbeak 3, Indigo Bunting 109, Eastern Towhee 23, Chipping Sparrow 11, Field Sparrow 8, Grasshopper Sparrow 1, Song Sparrow 3, Dark-eyed Junco 7, Red-winged Blackbird 16, Eastern Meadowlark 11, Common Grackle 57, Brown-headed Cowbird 14, Orchard Oriole 1, Purple Finch 1, House Finch 7, American Goldfinch 13, House Sparrow 7.

Total: 101 species; 1496 individuals.

Coordinator: Mike Turner, 1131 Shirley St., Columbia, SC 29205.

Participants: David Dobson, Tim Kalbach, Nancy Lyman, Gary Sowell, Mike Turner.

Richland County, SC. (Piedmont and Inner Coastal Plain)

4:30 AM to 11:30 PM. Temp 65° to 80° F. Wind SW, 5 to 20 mph. AM partly cloudy; PM light rain. Regular observers: 15 in field in 5 parties. Total regular party-hours 46.5; total regular party-miles 279; 25.5 hours and 10 miles on foot; 21 hours and 269 miles by car. Owling observers: 4 in 2 parties. Owling party-hours 7; owling party-miles 62. Totals: 53.5 party-hours; 341 party-miles; 15 participants.

Double-crested Cormorant 3, Anhinga 5, Great Blue Heron 26, Great Egret 22, Little Blue Heron 12, Cattle Egret 45, Green Heron 3, Yellow-crowned Night-Heron 1, Canada Goose 43, Wood Duck 24, Mallard 9, Black Vulture 5, Turkey Vulture 25, Osprey 3, Mississippi Kite 2, Red-shouldered Hawk 4, Red-tailed Hawk 7, Wild Turkey 2, Northern Bobwhite 2, Killdeer 10, Spotted Sandpiper 1, Ring-billed Gull 2, Rock Dove 72, Mourning Dove 207, Yellow-billed Cuckoo 12, Barn Owl 1, Eastern Screech-Owl 3, Great Horned Owl 1, Barred Owl 9, Common Nighthawk 4, Chuck-will's-widow 15, Whip-poor-will 11, Chimney Swift 136, Ruby-throated Hummingbird 5, Belted Kingfisher 2, Red-headed Woodpecker 10, Red-bellied Woodpecker 42, Downy Woodpecker 10, Hairy Woodpecker 2, Northern (Yellow-shafted) Flicker 6, Pileated Woodpecker 11, Eastern Wood-Pewee 20, Acadian Flycatcher 24, Eastern Phoebe 3, Great Crested Flycatcher 35, Eastern Kingbird 35, Horned Lark 9, Purple Martin 70, Northern Rough-winged Swallow 52, Barn Swallow 65, Blue Jay 69, American Crow 67, Fish Crow 14, crow sp. 60, Carolina Chickadee 46, Tufted Titmouse 42, White-breasted

Nuthatch 8, Brown-headed Nuthatch 19, Carolina Wren 63, Blue-gray Gnatcatcher 38, Eastern Bluebird 16, Swainson's Thrush 1, Wood Thrush 14, American Robin 103, Gray Catbird 5, Northern Mockingbird 145, Brown Thrasher 24, Cedar Waxwing 2, Loggerhead Shrike 8, European Starling 107, White-eyed Vireo 17, Yellow-throated Vireo 14, Red-eyed Vireo 29, Northern Parula 30, Yellow-throated Warbler 10, Pine Warbler 41, Prairie Warbler 6, Blackpoll Warbler 4, American Redstart 7, Prothonotary Warbler 25, Swainson's Warbler 7, Ovenbird 2, Northern Waterthrush 3, Louisiana Waterthrush 1, Kentucky Warbler 9, Common Yellowthroat 18, Hooded Warbler 10, Yellow-breasted Chat 14, Summer Tanager 27, Scarlet Tanager 2, Northern Cardinal 255, Rose-breasted Grosbeak 1, Blue Grosbeak 15, Indigo Bunting 52, Painted Bunting 2, Dickcissel 4, Eastern Towhee 39, Chipping Sparrow 7, Field Sparrow 1, Grasshopper Sparrow 1, Red-winged Blackbird 65, Eastern Meadowlark 3, Common Grackle 345, Brown-headed Cowbird 33, Orchard Oriole 17, House Finch 143, House Sparrow 47.

Total: 106 species; 3285 individuals.

Coordinator: Robin Carter, 4165 East Buchanan Drive, Columbia, SC.

Participants: Jim Beasley, Phyllis Beasley, Robin Carter, Joyce Davenport, Steve Dennis, Caroline Eastman, Glenn Englehardt, Henry Fuseler, Jerry Griggs, Malia Griggs, Patty McCourt, Pete Stewart, Sarah Stewart, Tammy Sutherland, James Wilson.

Spartanburg County, SC. (Piedmont)

5:30 AM to 10:00 PM. Temp 65° to 75° F. Wind W, 0 to 15 mph. AM cloudy; PM light rain. Regular observers: 18 in field in 11 parties. Total regular party-hours 81.5; total regular party-miles 405; 36.5 hours and 36 miles on foot; 24 hours and 365 miles by car; 1 hour and 4 miles by canoe. Owling observers: 8 in 4 parties. Owling party-hours 5; owling party-miles 5. Feeder watchers: 19 at 15 feeding stations. Feeder watcher hours 12. Totals: 98.5 party-hours; 410 party-miles, 39 participants.

Double-crested Cormorant 1, Great Blue Heron 8, Cattle Egret 3, Green Heron 4, Yellow-crowned Night-Heron 1, Canada Goose 73, Wood Duck 2, Mallard 80, Black Vulture 11, Turkey Vulture 39, Osprey 1, Cooper's Hawk 1, Red-shouldered Hawk 4, Red-tailed Hawk 9, Wild Turkey 3, Northern Bobwhite 21, American Coot 2, Killdeer 14, Solitary Sandpiper 2, Spotted Sandpiper 2, Rock Dove 71, Mourning Dove 211, Yellow-billed Cuckoo 1, Barn Owl 1, Barred Owl 1, Common Nighthawk 5, Chuck-will's-widow 9, Chimney Swift

152, Ruby-throated Hummingbird 9, Belted Kingfisher 6, Red-bellied Woodpecker 23, Yellow-bellied Sapsucker 1, Downy Woodpecker 6, Hairy Woodpecker 2, Northern (Yellow-shafted) Flicker 7, Pileated Woodpecker 2, Eastern Wood- Pewee 5, Acadian Flycatcher 3, Eastern Phoebe 25, Great Crested Flycatcher 8, Eastern Kingbird 26, Horned Lark 4, Purple Martin 24, Northern Rough- winged Swallow 12, Cliff Swallow 20, Barn Swallow 100, Blue Jay 143, American Crow 61, Fish Crow 1, Carolina Chickadee 53, Tufted Titmouse 34, White-breasted Nuthatch 4, Brown-headed Nuthatch 7, Brown Creeper 2, Carolina Wren 62, House Wren 4, Blue-gray Gnatcatcher 5, Eastern Bluebird 130, Wood Thrush 7, American Robin 369, Gray Catbird 7, Northern Mockingbird 133, Brown Thrasher 85, American Pipit 1, Cedar Waxwing 15, European Starling 259, White-eyed Vireo 1, Red-eyed Vireo 19, Northern Parula 8, Cape May Warbler 1, Yellow-throated Warbler 3, Pine Warbler 13, Prairie Warbler 6, American Redstart 1, Louisiana Waterthrush 1, Kentucky Warbler 1, Common Yellowthroat 6, Hooded Warbler 1, Yellow-breasted Chat 6, Summer Tanager 10, Scarlet Tanager 1, Northern Cardinal 160, Blue Grosbeak 14, Indigo Bunting 48, Dickcissel 1, Eastern Towhee 54, Chipping Sparrow 42, Field Sparrow 14, Grasshopper Sparrow 6, Song Sparrow 13, White-throated Sparrow 2, Bobolink 120, Red-winged Blackbird 88, Eastern Meadowlark 65, Common Grackle 504, Brown-headed Cowbird 34, Orchard Oriole 3, House Finch 111, American Goldfinch 28, House Sparrow 35.

Total: 100 species; 3817 individuals.

Coordinator: Lyle Campbell, 126 Greengate Lane, Spartanburg, SC 29307.

Participants: Robbie Allen, Tom Allen, Frankie Altman, Lee Altman, Susan Barry, Susan Bennett, Anna Bennett, Michael Bennett, Tim Brown, David Campbell, Lyle Campbell, Matthew Campbell, Marion Clark, Sam Cooper, Flo Erickson, John Erickson, Brian Glenn, Catherine Glenn, Teresa Glenn, John Green, J. B. Hines, Myra Hines, Gill Hooper, Jack Jennings, George Labancik, Micky Marotte, Marian Murph, Gill Newberry, Gibbes Patton, Bob Powell, Sandra Powell, Doug Raynor, Alan Rose, Ginny Scott, Walton Scott, Mac Shealey, Scott Taylor, Gerald Thurmond, Les Young.

Sumter County, SC. (Inner Coastal Plain)

7:30 AM to 12:30 PM. Temp 68° to 80° F. Wind NE, 5 to 10 mph. AM partly cloudy; PM partly cloudy. Regular observers: 2 in field in 1 party. Total regular party-hours 5; total regular party-miles 2.5; 5 hours and 2.5 miles on foot. Totals: 5 party-hours; 2.5 party-miles; 2 participants.

Green Heron 1, Wood Duck 4, Turkey Vulture 2, Broad-winged Hawk 1, Mourning Dove 1, Yellow-billed Cuckoo 1, Chimney Swift 2, Ruby-throated Hummingbird 3, Red-headed Woodpecker 2, Red-bellied Woodpecker 14, Downy Woodpecker 5, Northern (Yellow-shafted) Flicker 3, Pileated Woodpecker 5, Eastern Wood-Pewee 8, Acadian Flycatcher 10, Great Crested Flycatcher 10, Blue Jay 1, Fish Crow 9, Carolina Chickadee 4, Tufted Titmouse 3, White-breasted Nuthatch 1, Brown-headed Nuthatch 2, Carolina Wren 25, Blue-gray Gnatcatcher 17, Wood Thrush 2, Brown Thrasher 3, White-eyed Vireo 22, Yellow-throated Vireo 2, Red-eyed Vireo 5, Northern Parula 33, Yellow-throated Warbler 11, Pine Warbler 7, Blackpoll Warbler 1, Prothonotary Warbler 8, Kentucky Warbler 2, Hooded Warbler 6, Summer Tanager 7, Northern Cardinal 10, Indigo Bunting 1, Eastern Towhee 1, Common Grackle 6, Brown-headed Cowbird 5.

Total: 42 species; 266 individuals.

Coordinator: Irvin Pitts, SCPRT, 1205 Pendleton St., Columbia, SC 29201.

Participants: Terry Hurley, Irvin Pitts.

Williamsburg County, SC. (Outer Coastal Plain)

6:30 AM to 8:30 PM. Temp 68° to 82° F. Wind NE, 5 to 10 mph. AM partly cloudy; PM partly cloudy. Regular observers: 2 in field in 1 party. Total regular party-hours 3; total regular party-miles 21; 1 hour and 1 mile on foot; 2 hours and 20 miles by car. Totals: 3 party-hours; 21 party-miles; 2 participants.

Little Blue Heron 1, Cattle Egret 7, Green Heron 2, Black Vulture 2, Turkey Vulture 11, Broad-winged Hawk 2, Red-tailed Hawk 1, Wild Turkey 1, Northern Bobwhite 3, Mourning Dove 20, Yellow-billed Cuckoo 1, Chuck-will's-widow 2, Whip-poor-will 2, Chimney Swift 4, Ruby-throated Hummingbird 2, Red-headed Woodpecker 3, Red-bellied Woodpecker 2, Eastern Wood-Pewee 2, Great Crested Flycatcher 6, Eastern Kingbird 2, Horned Lark 1, Purple Martin 2, Barn Swallow 15, American Crow 25, Carolina Chickadee 3, Carolina Wren 5, Blue-gray Gnatcatcher 5, Eastern Bluebird 6, Northern Mockingbird 6, Brown Thrasher 4, Loggerhead Shrike 1, European Starling 12, White-eyed Vireo 2, Northern Parula 2, Yellow-throated Warbler 1, Louisiana Waterthrush 1, Summer Tanager 3, Northern Cardinal 4, Blue Grosbeak 2, Indigo Bunting 4, Eastern Towhee 7, Chipping Sparrow 2, Eastern Meadowlark 1, Common Grackle 10, Brown-headed Cowbird 2, Orchard Oriole 4, House Sparrow 1.

Total: 47 species; 211 individuals.

Coordinator: John Snow, Route 1, Box 192, Hemingway, SC 29554.

Participants: John Snow, Paula Sutton.

Summary of Spring 1996 NAMC in South Carolina:

(The figures in parentheses indicate the number of counties which recorded a species.)

Common Loon 4 (1), Pied-billed Grebe 6 (3), Brown Pelican 224 (3), Double-crested Cormorant 237 (13), Anhinga 163 (7), Least Bittern 17 (4), Great Blue Heron 142 (14), Great Egret 568 (10), Snowy Egret 788 (6), Little Blue Heron 435 (8), Tricolored Heron 291 (5), Cattle Egret 872 (9), Green Heron 139 (16), Black-crowned Night-Heron 12 (3), Yellow-crowned Night-Heron 9 (4), White Ibis 2364 (6), Glossy Ibis 20 (2), Wood Stork 22 (3), Mute Swan 1 (1), Canada Goose 297 (12), Wood Duck 288 (15), American Black Duck 21 (2), Mottled Duck 53 (3), Mallard 187 (12), Blue-winged Teal 33 (3), Northern Shoveler 1 (1), Ring-necked Duck 3 (1), Hooded Merganser 5 (1), Red-breasted Merganser 2 (1), Ruddy Duck 3 (1), Black Vulture 203 (14), Turkey Vulture 617 (18), Osprey 60 (11), Swallow-tailed Kite 11 (4), Mississippi Kite 37 (5), Bald Eagle 16 (6), Northern Harrier 2 (2), Sharp-shinned Hawk 2 (1), Cooper's Hawk 5 (5), accipiter sp. 1 (1), Red-shouldered Hawk 51 (12), Broad-winged Hawk 11 (6), Red-tailed Hawk 74 (15), American Kestrel 4 (2), Wild Turkey 43 (9), Northern Bobwhite 122 (16), Clapper Rail 28 (4), King Rail 6 (3), Virginia Rail 2 (2), Sora 1 (1), Purple Gallinule 11 (2), Common Moorhen 171 (6), American Coot 70 (8), Black-bellied Plover 79 (3), Wilson's Plover 7 (3), Semipalmated Plover 499 (3), Killdeer 134 (15), American Oystercatcher 22 (2), Black-necked Stilt 385 (3), American Avocet 39 (1), Greater Yellowlegs 12 (3), Lesser Yellowlegs 56 (3), Solitary Sandpiper 4 (2), Willet 48 (3), Spotted Sandpiper 18 (9), Whimbrel 54 (2), Ruddy Turnstone 35 (3), Red Knot 215 (1), Sanderling 207 (4), Semipalmated Sandpiper 2168 (3), Western Sandpiper 50 (2), Least Sandpiper 3451 (4), peep sp. 425 (2), Dunlin 37 (3), Stilt Sandpiper 92 (1), Short-billed Dowitcher 53 (2), dowitcher sp. 37 (2), Laughing Gull 541 (5), Bonaparte's Gull 2 (1), Ring-billed Gull 50 (6), Herring Gull 9 (2), Great Black-backed Gull 1 (1), Gull-billed Tern 8 (2), Caspian Tern 28 (3), Royal Tern 221 (4), Sandwich Tern 5 (2), Common Tern 8 (1), Forster's Tern 18 (5), Least Tern 622 (5), Black Tern 5 (1), Black Skimmer 154 (2), Rock Dove 354 (12), Eurasian Collared-Dove 2 (1), Mourning Dove 1696 (18), Common Ground-Dove 12 (4), Black-billed Cuckoo 7 (1), Yellow-billed Cuckoo 110 (14), Barn

Owl 6 (4), Eastern Screech-Owl 12 (5), Great Horned Owl 5 (4), Barred Owl 31 (7), Common Nighthawk 22 (7), Chuck-will's-widow 131 (12), Whip-poor-will 46 (8), Chimney Swift 1015 (17), Ruby-throated Hummingbird 75 (13), Belted Kingfisher 33 (14), Red-headed Woodpecker 120 (12), Red-bellied Woodpecker 353 (18), Yellow-bellied Sapsucker 1 (1), Downy Woodpecker 80 (15), Hairy Woodpecker 15 (7), Red-cockaded Woodpecker 9 (4), Northern (Yellow-shafted) Flicker 43 (13), Pileated Woodpecker 111 (16), Eastern Wood-Pewee 128 (17), Acadian Flycatcher 148 (13), Least Flycatcher 1 (1), Eastern Phoebe 81 (10), Great Crested Flycatcher 602 (17), Eastern Kingbird 291 (16), Horned Lark 15 (4), Purple Martin 1262 (15), Tree Swallow 207 (5), Northern Rough-winged Swallow 185 (14), Bank Swallow 3 (2), Cliff Swallow 153 (6), Barn Swallow 671 (17), Blue Jay 633 (16), American Crow 660 (16), Fish Crow 254 (15), crow sp. 273 (7), Carolina Chickadee 691 (17), Tufted Titmouse 448 (17), Red-breasted Nuthatch 3 (2), White-breasted Nuthatch 36 (9), Brown-headed Nuthatch 120 (15), Brown Creeper 2 (1), Carolina Wren 506 (18), House Wren 4 (1), Marsh Wren 53 (4), Blue-gray Gnatcatcher 346 (18), Eastern Bluebird 527 (17), Veery 3 (3), Gray-cheeked Thrush 1 (1), Swainson's Thrush 1 (1), Wood Thrush 81 (13), American Robin 630 (13), Gray Catbird 60 (13), Northern Mockingbird 801 (17), Brown Thrasher 436 (17), American Pipit 1 (1), Cedar Waxwing 352 (10), Loggerhead Shrike 77 (12), European Starling 1289 (17), White-eyed Vireo 255 (15), Solitary Vireo 8 (2), Yellow-throated Vireo 49 (9), Red-eyed Vireo 271 (16), Blue-winged Warbler 1 (1), Tennessee Warbler 1 (1), Northern Parula 315 (16), Yellow Warbler 10 (5), Chestnut-sided Warbler 1 (1), Magnolia Warbler 5 (2), Cape May Warbler 2 (2), Black-throated Blue Warbler 20 (5), Yellow-rumped (Myrtle) Warbler 6 (4), Black-throated Green Warbler 16 (3), Blackburnian Warbler 1 (1), Yellow-throated Warbler 156 (14), Pine Warbler 260 (16), Prairie Warbler 98 (10), Palm Warbler 2 (1), Blackpoll Warbler 10 (4), Black-and-white Warbler 24 (7), American Redstart 30 (12), Prothonotary Warbler 138 (12), Worm-eating Warbler 17 (4), Swainson's Warbler 23 (6), Ovenbird 40 (8), Northern Waterthrush 5 (3), Louisiana Waterthrush 13 (8), Kentucky Warbler 49 (10), Common Yellowthroat 191 (15), Hooded Warbler 107 (13), Yellow-breasted Chat 104 (15), Summer Tanager 227 (17), Scarlet Tanager 20 (7), Northern Cardinal 1356 (18), Rose-breasted Grosbeak 2 (2), Blue Grosbeak 119 (15), Indigo Bunting 525 (17), Painted Bunting 103 (6), Dickcissel 5 (2), Eastern Towhee 401 (17), Bachman's Sparrow 12 (3), Chipping Sparrow 134 (12), Field Sparrow 46 (8), Savannah Sparrow 15 (2), Grasshopper Sparrow 13 (5), Seaside Sparrow 10 (1), Song Sparrow 22 (4), Swamp Sparrow 3 (2), White-throated Sparrow 7 (2), Dark-eyed Junco 9 (2), Bobolink 391 (3), Red-winged Blackbird 1748 (16), Eastern Meadowlark 223

(10), Boat-tailed Grackle 9700 (5), Common Grackle 2024 (18), Brown-headed Cowbird 301 (18), blackbird sp. 7 (1), Orchard Oriole 153 (17), Baltimore Oriole 2 (1), Purple Finch 5 (3), House Finch 404 (11), American Goldfinch 142 (9), Evening Grosbeak 1 (1), House Sparrow 223 (13).

Totals: 210 species, 46,729 individuals.

Observers: 138 in 67 parties; Party-hours: 242 hours on foot, 212.5 hours by car, 1.5 hours by boat, 1 hour by canoe, 7 hours by bicycle. Party-miles: 154.5 miles on foot, 2645 miles by car, 0.5 miles by boat, 4 miles by canoe, 10 miles by bicycle. Feeder watch: 48.5 hours by 34 watchers at 25 feeding stations. Owling: 28.25 hours and 103.5 miles by 30 observers in 17 parties.

Editor's Note: Spring Bird Counts, Migration Counts, Christmas Bird Counts, and similar counts provide substantial opportunities for birders of all levels of experience to contribute to our knowledge of bird populations, migration patterns, and more. Counts reported in The Chat are open to the public, although pre-registration is suggested. Simply contact the compiler of the count that interests you. BW.

General Field Notes

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Publication of any unusual sightings in the General Field Notes or Briefs for the Files does not imply that these reports have been accepted into the Official Checklist of Birds recorded for either North or South Carolina. Decisions regarding the Official Checklists are made by the respective State Records Committees and will be reported periodically in The Chat.

First Record of Calliope Hummingbird in North Carolina

Fred Thompson	Wade Fuller	Bob Holmes
5013 Sand Ridge Road	103 Little Rossi Road	4003 Trent Pines Drive
New Bern, NC 28560	New Bern, NC 28560	New Bern, NC 28562

During the last two weeks of October, 1995, the senior author noticed an immature male hummingbird at his feeder that was different from the Ruby-throated Hummingbirds (*Archilochus colubris*) which had frequented his yard earlier in the fall. On the morning of 1 November the three authors were able to view this bird at leisure for about two hours while it was perched, flying, and feeding. We watched it with 9X and 10X binoculars and a 20-45X spotting scope at a distance of 5 - 15 m. Meanwhile, multiple color slides were made of the bird at the feeder with a 50 mm lens. To assist in size determination, a photograph was made with a ruler held at the perch from which the bird fed.

By observing the bird and viewing the projected slides, we felt that this was an immature male Calliope Hummingbird (*Stellula calliope*). It was a small hummingbird with a relatively short bill that appeared little if any longer than the head. The tail was short, with wings extending about 3 mm beyond its tip when the bird was perched. The throat showed multiple short dark streaks. More striking was a single iridescent magenta gorget feather that was elongated rather than rounded and which protruded at an angle from the other feathers. The under parts were white except for the flanks, which were a color between buff and a pale apricot. The back was green without any rufous color. The retrices were dark, with their proximal third being a rich brown or mahogany. The bird did not vocalize.

Slides were sent for review to Nancy Newfield of Metairie, LA. Ms. Newfield has extensive experience with hummingbird identification, including having seen several dozen Calliope Hummingbirds and having banded 15 of that species in Louisiana. After studying the photographs Ms. Newfield was kind enough to write a detailed letter in which she concurred in our identification of the bird as a Calliope Hummingbird. The following is excerpted from her letter:

In summary, we can see that the small size of the bird eliminates the larger species such as Anna's Hummingbird (*Calypte anna*) or Broad-tailed Hummingbird (*Selasphorus platycercus*), both of which have gorgets and backs of similar colors. The shortness of the bill and tail also eliminates Broad-billed Hummingbird, as that species has a very long tail. The magenta color of the gorget feather eliminates all other species except Anna's Hummingbird and Broad-tailed Hummingbird, which have been eliminated because of their larger size, longer bills and longer tails (Broad-tailed Hummingbird). Actually the gorget color of Anna's Hummingbird and Broad-tailed Hummingbird is more rose red, but structural colors, such as those of hummingbird gorgets, are subject to a certain amount of interpretation by any observer. The single gorget feather clearly identifies this individual as an immature male.

We believe that this photographically-documented identification of a Calliope Hummingbird represents the first record of that species in North Carolina and probably the most easterly record in the United States.

Literature Cited

Scott, Shirley L. et al. (eds.). *Field Guide to the Birds of North America*, National Geographic Society, 1983.

Nancy Newfield, Metairie, LA. Letter to Fred Thompson dated 26 February 1996. Available from Fred Thompson.

Editor's Notes: *Harry LeGrand, chairman of the North Carolina Records Committee, believes that the Committee will be able to act on this report in 1997.*

Field identification of female and immature hummingbirds can be difficult. Please call to report any hummingbird seen in the late fall or winter in the Carolinas to your Bird Records Committee Chairman, the Editor of Briefs for the Files, your Field Notes Editor, and the Carolina Bird Club's Rare Bird Alert. This way others can help identify and document the bird.. BW

Pink and Orange Ibises in Coastal Georgetown County, South Carolina

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Since at least the late 1960s, up to 20,000 breeding pairs of White Ibises (*Eudocimus albus*) have traditionally nested on Pumpkinseed Island in Winyah Bay, Georgetown County, South Carolina (Bildstein 1993). Between 10 May and 15 August 1989, I made several visits each week to this breeding colony site and monitored ibis activity at nearby marshes and swamps.

Although White Ibises at this colony site appear dingy as a result of stained feathers, in 1989, D. Bauer, M. Frix, J. Johnston, B. McCraith, and I observed two ibises with colorful plumage. On 15 May 1989, I observed a pale pink ibis (a pale tint of Smithe color #3 [Vinaceous], Smithe 1975) at the colony site. The black-tipped outer primary feathers were paler than the rest of the plumage. The facial skin and legs were light red. The bill was black and relatively short. There is noticeable sexual dimorphism in the bill size of White Ibises (Kushlan 1977), thus suggesting that this bird was a female. When first sighted, this bird was standing on a nest among a group of about 75 White Ibis nests in black needlerush (*Juncus roemerianus*). When approached the bird took flight, flew in circled overhead, and then settled down at the same location. I saw this bird again in the same general location on 16 and 17 May.

On 21 May at 1000 h, I observed a vibrant, pinkish-orange ibis (between Smithe colors #14 [Scarlet] and #15 [Flame Scarlet], Smithe 1975) at the colony site. The black-tipped outer primary feathers were paler than the rest of the plumage. The facial skin, legs, and gular pouch were brilliant, glossy red (Smithe color #11 [Spectrum Red]), and the bill was dark, glossy black. The bill length of this bird suggested that it was a female. Compared with White Ibises at the colony site, the shape of the gular pouch of this bird (compare Rudegeair 1975) was larger, shinier, and more pendulous, and was dotted with warty protuberances. A well-defined fringe of pale feathers (similar to Smithe color #92 [Pale Horn Color], Smithe 1975) surrounded the face. In subadult White Ibises, the feathers on the head are the last to be replaced and sometimes are not molted until spring of the third year (De Santo et al., 1990 and unpublished). Although a sharp demarcation between juvenal and adult feathers is not typical in White Ibises, the pale feathers of this bird might have been remnants of juvenal plumage. When first sighted, this bird was perched

on a clump of black needlerush on the periphery of a cluster of around 100 White Ibis nests about 150 m north of where the pink ibis had been seen. The bird was not tending a nest. At 1030 h the bird left the island with a flock of 25 adult White Ibises, flying north out of view. At 1600 h, it was again seen at the colony site in the same location. When approached, it flew about 100 m to the eastern edge of the island and landed on the ground, where it remained at least until I left an hour later.

Although I continued to make regular trips to the colony site until mid-August, I did not see either of these colorful ibises again.

Both birds were photographed with a 210 mm lens from distances of 30 - 50 m. Copies of the photographs are on file at the Charleston Museum (360 Meeting Street, Charleston, SC 29403).

Ibises have been studied at the colony site since 1979, but pink and orange ibises have not been previously reported. In 1987, a pink ibis was observed in the Charleston area (Belser 1989). As previously suggested (Belser 1989) these rare, colorful visitors to coastal South Carolina are likely to be either hybrids of Scarlet (*Eudocimus ruber*) and White Ibises (Ramo and Busto 1982, 1987) or Scarlet Ibises lacking proper amounts of dietary carotenoids (Fox 1962, Zuquim Antas 1979).

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BRIEFS FOR THE FILES

Ricky Davis
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Zebulon, NC 27597

(All dates spring 1996)

PACIFIC LOON: One was at Huntington Beach State Park, SC, Mar. 12 (Jack Peachey). This could have been the same individual that was reported from Litchfield Beach, SC, several weeks earlier.

HORNED GREBE: One in alternate plumage was late on Lake Norman, NC, May 19 (David Wright).

RED-NECKED GREBE: In addition to the several winter season reports, one was at Jordan Lake, NC, Mar. 16 (Will Cook, Fran Hommersand); one was on Lake Gaston, NC, Mar. 30 (Ricky Davis); and two were at Ft. Macon, NC, Apr. 18 (Randy Newman, fide John Fussell).

EARED GREBE: One was rare at Roanoke Rapids Lake, NC, Mar. 30 (Ricky Davis), and the Goldsboro, NC, birds remained until May 12 (Eric Dean).

WESTERN GREBE: The bird previously reported from the winter at Cape Hatteras, NC, was last seen Mar. 9 (Wade Fuller, Bob Holmes, Larry Crawford).

CAPE VERDE (Feae's) PETREL: This always exciting species was found twice offshore this spring. Individuals were seen off Oregon Inlet, NC, May 26 & 27 (Mike Tove et al.).

HERALD PETREL: This species was seen well enough to identify only once this spring - off Oregon Inlet, May 26 (Mike Tove et al.).

SOOTY SHEARWATER: Good numbers passed Cape Hatteras point this spring. High counts included 1186 on May 24 (Ned Brinkley et al.) and 700-100 on May 31 (Audrey Whitlock, fide Brinkley).

MANX SHEARWATER: This species also staged a better than average near-shore passage at Cape Hatteras, with one on May 23, four on May 24, two on May 28 (Brinkley et al.) and another on May 31 (John Fussell). One was also found offshore out of Oregon Inlet May 27 (Mike Tove et al.).

LEACH'S STORM-PETREL: A good count of 47 off Oregon Inlet, NC, May 26 (Mike Tove et al.) was the peak total for the spring.

RED-BILLED TROPICBIRD: An immature Red-billed was found off Hatteras, NC, May 19 (Brian Patteson). This now makes three years in a row that this species has been found off North Carolina.

AMERICAN WHITE PELICAN: Three were found at Falls Lake on the Durham, NC, Spring Count April 21 (fide Will Cook) for a very rare inland record.

GREAT CORMORANT: A very rare inland record for South Carolina was an adult at Lake Monticello, Fairfield County, Apr. 21 (Lex Glover).

DOUBLE-CRESTED CORMORANT: This species continues to be found inland in increasing numbers, but the 3,000+ in a quarter-mile stretch of canal below the Lake Moultrie Dam Mar. 16 (Robin Carter, Caroline Eastman) must have been impressive.

MAGNIFICENT FRIGATEBIRD: An adult was seen in flight over Bogue Sound near Atlantic Beach, NC, May 6 (Charles Lynch, fide John Fussell).

LEAST BITTERN: One was seen in a freshwater pond at Topsail Beach, NC, May 11 (Gil Grant, fide Nell Moore), and two were seen at Little Pee Dee State Park, SC, May 12 (Robin Carter, Caroline Eastman).

GREAT EGRET: Two at Deerlake, Transylvania Co., NC, Apr. 13 provided a possible first spring record for the county (Tom Joyce, fide Norma Siebenheller).

SNOWY EGRET: Hard to come by inland in spring, one was a good find on the Chapel Hill, NC, Spring Count May 11 (Barbara Roth, Betty King).

LITTLE BLUE HERON: Also noteworthy inland in spring, an adult was at Jordan Lake, NC, May 3 (Len Pardue).

BLACK-CROWNED NIGHT-HERON: Good inland reports included single adults at Lake Wanteska, Transylvania Co., NC, Apr. 27 (Dick Thorsell, fide Norma Siebenheller), near Asheville, NC, May 2 (Simon Thompson, Larry Farer), and on the Durham, NC, Spring Count April 21 (fide Will Cook).

YELLOW-CROWNED NIGHT-HERON: Singles were found at Lake Zimmerman, Pauline, SC, May 11 (David and Matthew Campbell, fide Lyle Campbell), Jackson Park, Hendersonville, NC, Apr. 18 (Wayne Forsythe), and on the Chapel Hill, NC, Spring Count May 11 (fide Will Cook). Nesting once again occurred near Winston-Salem, NC, where four young fledged during late May (fide Ramona Snavelly). Also, an impressive three nests were active on the UNC-G campus in Guilford Co., NC, this spring (Herb Hendrickson).

GREATER WHITE-FRONTED GOOSE: The bird reported from Wilmington, NC, during the winter was last seen Mar. 3 by Sam Cooper and Jeff Pippen.

CINNAMON TEAL: Continuing from the winter, one was at the Savannah Spoil Site, Jasper Co., SC, Apr. 16 - May 4 (Steve Calver). Also two were seen along SC 170 in Savannah NWR Mar. 3 (Robin Carter, Caroline Eastman). Were some of these birds moving back and forth between these two sites?

NORTHERN SHOVELER: Two at Deerlake, Transylvania Co., NC, Apr. 15 (Jennifer Wren) provided a possible first county record. Also eight at the Savannah Spoil Site, SC, were very late May 31 (Steve Calver).

KING EIDER: Rare and unexpected was a female found at Ft. Macon, NC, at the jetty Mar. 25 & 26 (Will Cook, Les Todd, Leto Copeley).

OLDSQUAW: Absurdly late was the Oldsquaw found on the pond at Cape Hatteras, NC, May 31 (Lee Sterrenburg, fide John Fussell).

SURF SCOTER: Late were two Surf Scoters at the Nags Head, NC, Pier May 13 (Ricky Davis).

COMMON MERGANSER: Also very late were the two Common Mergansers at Pea Island NWR, NC, May 2 (Wendy Stanton).

RED-BREASTED MERGANSER: Possibly a record inland total was the 310 Red-breasteds found on Roanoke Rapids Lake, NC, Mar. 30 (Ricky Davis). Another good report included 14 on Lake Norman, NC, Apr. 14 (David Wright), with one still present as late as May 24!

OSPREY: One was back at Falls Lake, NC, a little early on Mar. 10 (Ricky Davis). One hopes the bird did not suffer too much. The temperature that day was 17 degrees!

SWALLOW-TAILED KITE: This species once again was found along North Carolina's Outer Banks this spring. Reports included one north of Rodanthe Apr. 9 (Susie Wright), two over Pea Island NWR Apr. 21 (fide Dwight Cooley), one to two over Buxton Apr. 29 (Marcia Lyons), one at Ocracoke May 18 (Russ Tyndall), and one again at Ocracoke May 28 (Norm Budnitz).

MISSISSIPPI KITE: This species seems to be increasing in the Carolinas, with reports being more numerous than ever. Some of the better reports included one in Durham, NC, May 14 (Norm Budnitz), two north of Pee Dee NWR, NC, Apr. 20 (Dick Burk), one east of Greenville, NC, May 11 (Russ and Patricia Tyndall), and a good count of 49 on the Congaree Swamp, SC, Spring Count May 11 (fide Robin Carter). In North Carolina, coastal migrants were found at Ft. Macon May 9 (Randy Newman, fide John Fussell), Hatteras May 23 (Ned Brinkley, Brian Patteson), Bodie Island pond May 24 (fide Dwight Cooley), and at Roanoke Island May 24 (Marcia Lyons).

COOPER'S HAWK: Late individuals (nesters?) were one in Gates Co., NC, May 26 and Durham, NC, May 31 (Merrill Lynch). A pair nested successfully in Winston-Salem, NC, this spring with three young fledging (fide Ramona Snively).

BROAD-WINGED HAWK: Rare in the coastal region, one was at Sneads Ferry, NC, May 11 (Gil Grant, fide Nell Moore); and a definite migrant was seen at Hatteras, NC, May 23 (Ned Brinkley, Brian Patteson).

GOLDEN EAGLE: Always exciting, two adults were seen in the mountains near Lake Toxaway during April and May (fide Norma Siebenheller).

AMERICAN KESTREL: What is probably the first breeding record for Brunswick County, NC, was the discovery of a nest at Holden Beach in May and June. Young were fledged, and it seems that this may have been the second year in a row at this site (Dick Brown)!

MERLIN: Rare inland were singles near Jordan Lake, NC, Apr. 20 (New Hope Audubon Society) and on the Durham, NC, Spring Count April 21 (fide Will Cook). Other spring reports included one at Beaufort, SC, Mar. 31 (Robin Carter, Caroline Eastman, et al.) and four late at Pea Island NWR, NC, May 12 (Dwight Cooley).

PEREGRINE FALCON: An inland migrant was seen at Jackson Park, Hendersonville, NC, Apr. 21 (Simon Thompson, Wayne Forsythe, Larry Farer). On the coast, one was late at Pea Island NWR May 12 (Dwight Cooley).

SANDHILL CRANE: Sandhill Cranes are very rare in the Carolinas, especially in spring. This season, there were two reports. One was flying north over Bodie Island pond on the Outer Banks May 24 (Paul Lehman, Shawneen Finnegan, Louis Bevier, Dave Provencher) and an impressive 16 were flying eastward in V-formation near New Bern, NC, May 14 (Doris Kingdon).

AMERICAN GOLDEN-PLOVER: Very rare in spring, one was at Hooper Lane, Mills River, Henderson Co., NC, Apr. 4 (Wayne Forsythe, Simon Thompson); and one was at Pea Island NWR, NC, Apr. 10 (C. H. Gambill).

WILSON'S PLOVER: Quite unusual locally were two flying over North Pond, Pea Island NWR, NC, Apr. 23 (Dwight Cooley).

SEMI-PALMATED PLOVER: The farthest inland reports included singles at Ecusta, Transylvania Co., NC, May 6 (Betty McIlwain), Hooper Lane, Henderson Co., NC, May 11 (Wayne Forsythe, Simon Thompson), and Lattimore Road, Cleveland Co., NC, Apr. 25 (Pat Wilkison, JoAnn Martin). Also two were near Goldsboro, NC, May 12 (Eric Dean), two were on the Chapel Hill, NC, Spring Count May 11 (fide Will Cook), and 6 was the peak near Rocky Mount, NC, May 13 (Ricky Davis).

BLACK-NECKED STILT: Locally unusual were two at the inlet at North Topsail Island, NC, Apr. 16 & May 17 (Nell Moore). Also very unusual was the individual found inland at the Hemingway, SC, Sewage Ponds Apr. 20 (Paula & George Sutton, fide Jack Peachey).

AMERICAN AVOCET: Of special interest was the pair that attempted to nest at the Savannah Spoil Site, Jasper Co., SC, during May (Steve Calver). A nest was built by mid-May but was gone by the end of the month. The peak count there this spring was 226 on Apr. 11 (Calver).

UPLAND SANDPIPER: The best spring reports included four at the Orangeburg, SC, Sod Farm Mar. 30 (Robin Carter, Caroline Eastman), one at Pea Island NWR, NC, Apr. 10 (C. H. Gambill), and 16 near Goldsboro, NC, Apr. 13 (Eric Dean) being an impressive spring total.

WILLET: One of the rarer inland migrant shorebirds, a Willet was a good find at Jordan Lake, NC, May 6 (Ricky Davis).

SANDERLING: Inland Sanderlings included four at Lake Monticello, Fairfield Co., SC, Apr. 28 (Robin Carter, Caroline Eastman), one at Lake Crabtree, Wake Co., NC, May 6 (Ricky Davis), and one at Goldsboro, NC, May 11 (Eric Dean).

RUDDY TURNSTONE: Two were rare at Lake Norman, NC, May 18 (David Wright).

SEMI-PALMATED SANDPIPER: The only inland migrants reported were one on the Chapel Hill, NC, Spring Count May 11 (fide Will Cook) and from one to four near Rocky Mount, NC, Apr. 21 - May 10 (Ricky Davis).

LEAST SANDPIPER: Good inland totals included 45 near Rocky Mount, NC, May 3 (Ricky Davis) and 23 at Lake Norman, NC, May 27 (David Wright).

WHITE-RUMPED SANDPIPER: One near Townville, SC, May 22 (Bob & Barbara Maxwell) was a locally good find. One was also near Rocky Mount, NC, May 3 & May 10 (Ricky Davis).

PECTORAL SANDPIPER: This species made a good showing in western North Carolina this spring. Three were in Plemmons, Transylvania Co. Mar. 23 (Betty McIlwain), one was in Pisgah Forest, Transylvania Co. Mar. 27 - 28 (McIlwain), and four were at Hooper Lane, Henderson Co. Mar. 31 (Wayne Forsythe, Simon Thompson).

STILT SANDPIPER: The peak count at the Savannah Spoil Site, SC, was 246 on May 8 (Steve Calver).

WILSON'S PHALAROPE: The only reports came from North Carolina's Outer Banks, where one was at Cape Hatteras May 1 (Audrey Whitlock, fide Dwight Cooley); three were on Bodie Island Lighthouse pond May 8 - 10 (fide Dwight Cooley); one was on South Pond, Pea Island NWR May 11 (Dwight Cooley); and one was on Bodie Island pond May 13 (Ricky Davis).

RED-NECKED PHALAROPE: One was at Bodie Island Lighthouse pond May 22 (Ned Brinkley, Brian Patteson) and again May 26 (Ricky Davis, Derb Carter, Jeff Pippen, Chris Eley, Pat Moore).

SOUTH POLAR SKUA: The only report was of one off Oregon Inlet, NC, May 26 (Mike Tove et al.).

LONG-TAILED JAEGER: Singles were found off Oregon Inlet May 26 (Mike Tove et al.) and off Hatteras May 27 (Brian Patteson et al.).

BLACK-HEADED GULL: One was found at Pea Island NWR, NC, Apr. 9 (C. H. Gambill), for the only report.

CALIFORNIA GULL: The last date for the wintering California Gull at Cape Hatteras was Mar. 16 - 17 (Allen Bryan, Russ Tyndall).

LESSER BLACK-BACKED GULL: The inland Lesser at Falls Lake, NC, from the winter was last seen Mar. 10 (Ricky Davis).

GLAUCOUS GULL: The last date for the Cape Hatteras wintering birds was Mar. 23 - 24 (Keith Camburn, Merrill & Ida Lynch).

GREATER BLACK-BACKED GULL: Two immatures were still at Falls Lake, NC, Mar. 10 (Ricky Davis).

ARCTIC TERN: There were only small numbers of Arctics offshore this spring, but truly amazing were one May 24 and three May 28 seen from shore at Cape Hatteras point (Ned Brinkley et al.)!

LEAST TERN: Two were good finds in Sumter, SC, Apr. 24 (Lex Glover).

SOOTY TERN: The usual handful of Sooties hanging out at the tern colony at Cape Hatteras point did not show up this spring. The only sighting was of one at the Hatteras Inlet spit May 27 (Bert Fisher et al.).

BLACK TERN: Numbers of this tern seemed down this spring. The best count was 14 at Cape Hatteras point May 28 (Brinkley et al.). Also locally rare onshore were three at Bear Island WMA, SC, May 1 (Robin Carter, Dennis Forsythe, Kenn Kaufman).

DOVEKIE: In the absolutely amazing department was the absurdly late and unexpected breeding plumaged Dovekie seen flying north past Cape Hatteras point May 27 (Simon Thompson, Bert Fisher, Taylor Piephoff, et al.)! Where did that bird spend the winter?

RAZORBILL: An injured Razorbill was picked up from the beach at Ft. Macon, NC, Apr. 13 (Randy Newman, fide John Fussell). The bird was taken to a local wildlife shelter, but it later died.

RINGED TURTLE-DOVE: A pair in a Columbia, SC, yard was closely studied to rule out the more expected Eurasian Collared-Dove (Jere Eggleston). These birds have apparently been present for some time, and observers need to be aware that the possibility of this form still being around in certain locations is still very real.

BLACK-BILLED CUCKOO: This species was reported more than usual with birds being found from the mountains to the coast. Most reports came from the mountains and the North Carolina Outer Banks, where there is definitely a late May migratory movement. There were at least seven reports from that coastal region. The latest date reported was one at Stumpy Point, Dare Co. mainland May 30 (Merrill Lynch).

LONG-EARED OWL: The wintering Long-eareds at the Beaufort Co., NC, VOA-A site were last recorded Mar. 31 when one was seen by John Wright.

BARN OWL: A locally good sighting was of one at Jackson Park, Hendersonville, NC, May 7 (Larry Farer, fide Simon Thompson).

SHORT-EARED OWL: Two found along Hooper Lane, Mills River, Henderson Co., NC, Apr. 6 (Jack Hudson) were an unexpected good find. The birds were seen by others later (Simon Thompson, Wayne Forsythe, Larry Farer) and provided a locally very rare record.

SAW-WHET OWL: Two were netted near Halifax, NC, Mar. 23 - 24 (Frank Enders) and were probably the last of the major winter flight of the past season.

YELLOW-BELLIED SAPSUCKER: One was late at Moore, Spartanburg Co., SC, May 11 (Robbie Allen, fide Lyle Campbell).

OLIVE-SIDED FLYCATCHER: In North Carolina, all reports came from the mountain region, with one in Jackson Park, Hendersonville, Apr. 29 (Simon Thompson, Larry Farer); one on Becky Mountain, Transylvania Co. May 11 (Beth Rogers, fide Norma Siebenheller); and one along the New River, Ashe Co. May 22 (Simon Thompson). In South Carolina, where decidedly much rarer, one was seen on the Congaree Swamp Spring Count May 4 (Tim Kalbach, Garry & Nancy Sowell, fide Robin Carter).

LEAST FLYCATCHER: Very rare in spring near the coast was a calling Least in Alligator River NWR, NC, May 11 (Dwight Cooley).

GRAY KINGBIRD: Rare but not unexpected was the Gray Kingbird found at Ft. Caswell, NC, May 18 (Lynn Barber). What was unexpected was that the bird remained and was later joined by a second bird by June 1 (Eric Dean, Harry LeGrand, Derb Carter, Jeff Pippen)!

SCISSOR-TAILED FLYCATCHER: This species is practically annual in the Carolinas. This spring one was south of the Village of Foxfire in the North Carolina Sandhills May 26 (Dick & Marion Burk) for a one-day occurrence.

HORNED LARK: A count of 12 singing birds at the Darlington Co., SC, Airport May 14 (Robin Carter, Caroline Eastman) was a good total for that state. In North Carolina, birds at the eastern edge of the normal range included two near Richlands, Onslow Co. May 11 (Nell Moore) and one near Gates, Gates Co. May 26 (Merrill Lynch).

TREE SWALLOW: A congregation of over 2,000 Tree Swallows at Salem Lake, Winston-Salem, NC, Apr. 6 (Lloyd Ramsey, Doug DeNeve, fide Ramona Snavelly) must have provided an amazing sight for an inland location.

NORTHERN ROUGH-WINGED SWALLOW: Two were in the Stumpy Point, Dare Co., NC, area most of May until mid-June (John Fussell). If nesting were

to be documented here, it would be most noteworthy for such an easterly location.

COMMON RAVEN: A pair again nested in downtown Winston-Salem, NC, and three young were seen to fledge Apr. 14 (Regina Burt, Joyce Mauck, Ramona Snavelly).

SEDGE WREN: Three at Santee NWR, SC, Mar. 16 (Jack Peachey, Paul Rogers, Tonya Spires, David Donmoyer) provided a good total for an inland site.

MARSH WREN: Inland reports of Marsh Wren included singles at Mason Farm, Chapel Hill, NC, Mar. 24 - Apr. 14 (Jon Bennett, Will Cook); Pisgah Forest, Transylvania Co., NC, Apr. 22 (Jennifer Wren); and Lake Townsend, Guilford Co., NC, May 4 (Herb Hendrickson, Peggy Ferebee).

EASTERN BLUEBIRD: Locally unusual were two along US 264 north of Stumpy Point, Dare Co., NC, Apr. 2 (John Fussell), one at Bodie Island Lighthouse pond May 22 (Brian Patteson, Ned Brinkley) and several breeding pairs near Trenton, Jones Co., NC, during May (fide Nell Moore).

VEERY: One was quite early at Savannah NWR, SC, Apr. 7 (Steve Calver). Also of note was one at Alligator River NWR, NC, Apr. 18 (Jeff Lewis).

GRAY-CHEEKED THRUSH: This species was reported in the usual low numbers, with the most interesting report being a late Gray-cheeked in Manteo, NC, May 28 (Jeff Lewis).

BICKNELL'S THRUSH: An individual of this newly-recognized species was seen and heard in Durham, NC, on the late date of May 26 (Len & Esther Pardue). Observers need to be aware that the field marks for this form are still being worked out and that all Gray-cheeked types need to be studied closely in great detail.

SWAINSON'S THRUSH: Numbers were about average for this species, with the best count received being 18 at Hemlock Bluffs, Cary, NC, May 6 (Ricky Davis).

GRAY CATBIRD: An excellent total of 40 were seen on the Milltail Creek BBS, Dare Co., NC, May 30 (Merrill Lynch).

AMERICAN PIPIT: An excellent count of 28 were seen at Hooper Lane, Henderson Co., NC, on the rather late date of May 11 (Wayne Forsythe, Simon Thompson). Also on that date single pipits were found at Pauline, Spartanburg Co., SC (fide Lyle Campbell), and in North Carolina at Bodie Island Lighthouse pond (Dwight Cooley).

WARBLING VIREO: This rare spring migrant was found in North Carolina at Fontana Dam Apr. 27 & 28 (Will Cook, Mike Tove, m. ob.), Eno River State Park May 4 (Edith Tatum), near Greensboro May 11 (Dennis Burnette, fide Herb Hendrickson), and Ringwood, Halifax Co. May 17 (Merrill Lynch).

"BREWSTER'S" WARBLER: This hybrid form (Blue-winged X Golden-winged) was found twice this spring. One was at Landsford Canal State Park, SC, Apr. 20 (Dot Hedrick, fide Adam & Phyllis Martin) and one was at Stecoah Gap, Graham Co., NC, Apr. 28 (Mike Tove, Will Cook, Ricky Davis).

ORANGE-CROWNED WARBLER: The Orange-crowned Warbler is normally hard to come by in spring in the Carolinas. This year was much different! Reports included one near Rocky Mount, NC, Mar. 30 (Ricky Davis); an amazing 15 different reports from Jackson Park, Hendersonville, NC, during the week of Apr. 17, with a peak of 4 on Apr. 23 (Wayne Forsythe, Simon Thompson); one at Fontana Dam, NC, Apr. 26 & 27 (Simon Thompson, Will Cook, Mike Tove, et al.); one at Lake Bowen, Spartanburg Co., SC, May 1 (Robin Carter, Dennis Forsythe, Kenn Kaufman); and a very late one at Black Balsam, NC, May 18 (Magnus Persmark).

NASHVILLE WARBLER: The only report received was of one at Jackson Park, Hendersonville, NC, May 4 (Pat Wilkison, JoAnn Martin).

CHESTNUT-SIDED WARBLER: Rare coastal reports included one at Manteo, NC, May 9 (Jeff Lewis) and one near Wilmington, NC, May 19 (Jeff Phippen).

MAGNOLIA WARBLER: This species had a better than average spring season in North Carolina. Many observers reported days with multiple Magnolias. The best reports came from the Outer Banks, where several were late, including two at Manteo May 31 (Jeff Lewis). One was 30 - 40 miles off of Hatteras May 27 when noted during a pelagic trip (Brian Patteson et al.).

YELLOW-RUMPED WARBLER: One was quite late at Pea Island NWR, NC, May 28 (John Fussell).

BAY-BREASTED WARBLER: One was early at Durham, NC, Apr. 22 (Len & Esther Pardue).

BLACKPOLL WARBLER: Early was one at Jackson Park, Hendersonville, NC, Apr. 20 (Simon Thompson) and late was one at Durham, NC, May 30 (Len Pardue).

CERULEAN WARBLER: One near Durham, NC, Apr. 21 (Len Pardue, Gordon Brown) was a locally good find.

BLACK-AND-WHITE WARBLER: Eight on the Raeford, NC, BBS May 25 (Harry LeGrand) was an excellent count for that Coastal Plain area.

WORM-EATING WARBLER: Fourteen on the Milltail Creek BBS, Dare Co., NC, May 30 (Merrill Lynch) was a good total. Also the three on territory in Horry Co., SC, in April and May (Steve & Barbara Thomas, fide Jack Peachey) were noteworthy.

SWAINSON'S WARBLER: One was a good find along the Broad River, Chester Co., SC, Apr. 28 (Robin Carter, Caroline Eastman), where the species is local at best in the Piedmont.

OVENBIRD: Sixteen on the Milltail Creek BBS, Dare Co., NC, May 30 (Merrill Lynch) was an excellent total for the outer Coastal Plain.

NORTHERN WATERTHRUSH: Good numbers passed through the Jackson Park, Hendersonville, NC, area this spring, with the peak one-day total being 13 on May 17 (Simon Thompson). Also one was late in Horry Co., SC, May 31 (Lex Glover).

MOURNING WARBLER: This rare species was reported once: a female was closely studied at Santee NWR, SC, May 23 (Barbara Maxwell).

WILSON'S WARBLER: North Carolina had the only reports, with individuals being found at Jordan Lake May 5 (Will Cook, Julia Shields), Hemlock Bluffs near Cary May 6 (Ricky Davis), Jackson Park in Hendersonville May 13 (Simon Thompson, Larry Farer), and Manteo May 17 (Jeff Lewis).

CANADA WARBLER: This species was found several times in eastern North Carolina this spring, with singles at Ringwood, Halifax Co. May 17 (Merrill Lynch) and Manteo May 9 & 10 (Jeff Lewis, John Fussell).

WESTERN TANAGER: The regularly wintering Western at Wilmington, NC, over the last four years was last seen Apr. 14 (Kitty Kosh). One wonders if he can make it five in a row this fall?

INDIGO BUNTING: One was a little early at Richlands, Onslow Co., NC, Apr. 4 (Jimi Moore).

PAINTED BUNTING: Locally unusual were one in Richlands, NC, Apr. 30 (Nell Moore), one in Stumpy Point, Dare Co., NC, until Apr. 21 (Wanda Best, fide John Fussell), and another at a Rodanthe, NC, feeder until Apr. 29 (fide Dwight Cooley).

DICKCISSEL: There were several good counts in South Carolina this spring. One male on May 11 and then 6 females May 14 at a field near Pauline, Spartanburg Co. (J. B. & Myra Hines, Lyle Campbell, et al.) were with a large Bobolink flock. There were up to three birds at Santee NWR by the end of May (Bob & Barbara Maxwell, Jack Peachey, Robin Carter, Caroline Eastman). In Eastover, Richland Co., 4 males were seen May 11 (Robin Carter, Caroline Eastman, Jerry Griggs), and by the end of the month, there were 4 females present! Other South Carolina reports included two males at Townville May 4 (Bob & Barbara Maxwell) and one in York Co. May 13 (David Wright). In North Carolina, reports included 5 with a large Bobolink flock near Raleigh May 6 (Ricky Davis) and one in Cleveland Co. May 17 (Dot McMurray, JoAnn Martin).

VESPER SPARROW: Good spring counts included 7 in Mills River, Henderson Co., NC, Apr. 3 (Wayne Forsythe, Simon Thompson) and 14 near Latta, Dillon Co., SC, Mar. 24 (Lex Glover, Mike Turner).

LARK SPARROW: Unexpected were two Lark Sparrows found in Horry Co., SC, Mar. 29 (Lex Glover, Mike Turner).

GRASSHOPPER SPARROW: Some of the more interesting reports included an early one at Savannah NWR, SC, Apr. 7 (Steve Calver); one at Jackson Park, Hendersonville, NC, Apr. 24 (Wayne Forsythe, Larry Farer); four far to the east at Alligator River NWR, NC, Apr. 18 (Dwight Cooley); and five at the Darlington Co., SC, Airport May 19 (Robin Carter, Caroline Eastman).

HENSLOW'S SPARROW: The only report was of one at Pine Island, Santee NWR, SC, Mar. 9 (Bob Maxwell et al.).

LeCONTE'S SPARROW: An amazing 10 - 12 were found at Pine Island, Santee NWR Mar. 9 (Bob Maxwell et al.), most likely a record total for the Carolinas.

LINCOLN'S SPARROW: The best reports (all North Carolina) included one at Mason Farm, Chapel Hill Mar. 30 (Will Cook); two near Rocky Mount Apr. 4 (Ricky Davis); one at Richlands, Onslow Co. Apr. 17 (Nell Moore); and one far to the west at Jackson Park, Hendersonville Apr. 24 (Wayne Forsythe).

WHITE-THROATED SPARROW: One was exceptionally late at Chapel Hill, NC, May 26 (fide Will Cook).

WHITE-CROWNED SPARROW: Some of the more interesting records involved three at the Savannah Spoil Site, Jasper Co., SC, Mar. 14 (Steve Calver); a good total of 10 near Mechanicsville, Lee Co., SC, Apr. 5 (Lex Glover); one at Fontana Dam, NC, Apr. 26 (Simon Thompson); and a late one at Pea Island NWR, NC, May 16 (fide Dwight Cooley).

DARK-EYED JUNCO: One was quite late at Bodie Island, NC, May 22 (Ned Brinkley, Brian Patteson).

SNOW BUNTING: One was at Turkey Pen Gap, on the Transylvania - Henderson Co. border Apr. 30 (fide Norma Siebenheller), for a very rare record. The bird was photographed and might possibly have been the same individual that was found during the winter at Hooper Lane in Henderson Co.

BOBOLINK: This species came through (locally) in better than average numbers this spring. The biggest flock reported was the 500+ near Raleigh, NC, May 6 (Ricky Davis).

RUSTY BLACKBIRD: Good counts in western North Carolina included 30 at Jackson Park, Hendersonville Apr. 12 (Simon Thompson) and an impressive 140 near Lake Osceola Mar. 30 (Wayne Forsythe).

BREWER'S BLACKBIRD: One was found with Rusties in Forsyth Co., NC, Mar. 31 (Lloyd Ramsey, Doug DeNeve, fide Ramona Snavely), and 20 were in Mechanicsville, Lee Co., SC, Apr. 5 (Lex Glover).

BALTIMORE ORIOLE: The large wintering flock in Sumter, SC, was studied a little more closely this spring. During March, 55 birds were banded, and it was felt that 65 - 70 birds were in the area (Kathleen Mallard, Lex Glover, Evelyn Dabbs). This was without a doubt one of the largest locally wintering flocks ever reported for the Carolinas. Also an early migrant (not present during winter) was seen in Zebulon, NC, Mar. 30 (Jean & Robert Jones).

PURPLE FINCH: One was late at Pea Island NWR, NC, May 12 (Dwight Cooley).

RED CROSSBILL: Not surprisingly, the only reports came from the mountains, where three were at Table Rock State Park, SC, Mar. 21 (Bob & Barbara Maxwell) and 4 were at Wolf Laurel Gap, Heintooga Road, Great Smoky Mountains Nat. Park, NC, May 18 (Eric Dean).

PINE SISKIN: One was late at Pea Island NWR., NC, May 12 (Dwight Cooley), and an impressive 100+ were at the Snowbird Lodge feeders near Robbinsville, NC, Apr. 18 (Simon Thompson).

EVENING GROSBEAK: The Snowbird Lodge feeders also hosted good numbers of Evening Grosbeak, with 100+ there Apr. 18 (Simon Thompson). They stayed for several weeks thereafter, as many were seen by CBC Fontana meeting field trip participants Apr. 27.

Editor's Note: Ricky Davis compiles Briefs for the Files from written reports he receives from members. If you simply don't know if a bird is a rarity for your location or date, send the report in anyway -- Ricky won't let you embarrass yourself! BW

CBC Rare Bird Alert
(704) 332-BIRD

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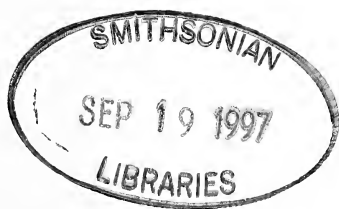
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Cover photo by Jimmy Wood, Camden, SC. Great Horned Owl feathers courtesy SC Department of Natural Resources.

The Status and Breeding Habits of the Worm-eating Warbler in South Carolina

*Where are These Secretive Birds,
And What are They Doing?*

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The Worm-eating Warbler (*Helmitheros vermivora*) is an unobtrusive, ground-dwelling bird that is a fairly common breeder in suitable habitats of the South Carolina mountains. Its status and distribution in other regions of the state is poorly known. Volunteers participating with the South Carolina Breeding Bird Atlas (coordinated by South Carolina Department of Natural Resources) have recently shed new light on several aspects of the Worm-eating Warbler's distribution. They have found that the bird is not as rare in the coastal plain as formerly believed, and several breeding records have been reported. It is at best quite rare in the piedmont, and few Atlas records have come from that region during the breeding season (J. Cely, pers. comm.). This species' migratory status is regarded as uncommon throughout South Carolina in the spring and fall (Potter *et al.* 1980). I have found it to be a fairly early transient in the fall, with many birds passing through from late August through early September.

I was able to study Worm-eating Warblers in the late 1980s in the Mountain Bridge Wilderness and Recreation Area of northern Greenville County, South Carolina. I found this wood warbler to be a fairly common resident there above altitudes of about 420 m. Boulder-strewn slopes, brushy hillsides, and wooded ravines are its preferred mountain haunts. Typical breeding habitats are covered with a fairly dense understory of rhododendron (*Rhododendron* sp.), Mountain Laurel (*Kalmia latifolia*), and sometimes Wild Hydrangea (*Hydrangea arborescens*). A variety of hardwoods ordinarily constitutes the overstory, but in several instances I found birds near small rivulets in the Jones Gap and Oil Camp Creek areas among the substantial numbers of Eastern Hemlock (*Tsuga canadensis*). As a whole, I find Harrison's

(1984) summary of this bird's mountain habitat as "wooded, leaf-covered slopes," quite descriptive.

Resident male Worm-eating Warblers arrive on their breeding grounds in these mountains in mid-April, probably before the main migration passage. My earliest recorded arrival date for the Caesars Head area is 19 April 1986. Breeding occurs shortly thereafter, and nest building starts by late April.

Bent (1953) stated that the nest of this species was quite characteristic, and Harrison (1984) noted that in many respects its location is similar to that chosen by the Black-and-white Warbler. These observations coincide with mine. I observed remarkably little variation in the biological timing, site selection, or nesting habits of this species.

I found 6 Worm-eating Warbler nests in the Caesars Head area, all of which were quite similar in location and description. Nests were placed on the ground, usually at the base of a small sapling, fallen branch, or exposed root. Most nests were concealed in a drift of leaves that had gathered in a small hollow or depression, thus rendering it nearly invisible. The selected site is almost always a wooded hillside or sometimes a bank cut along an old road bed. All 6 nests I found were adjacent to, or near, an old road bed or trail. The typical nest is rather bulky. Its outer layer is comprised of a thick, matted layer of dead leaves that blend perfectly with the surrounding ground debris. One nest I examined was built almost entirely of Cherry Birch (*Betula lenta*) leaves. Other plant materials woven into the outer layer include grasses, weed stems, and sometimes moss.

The inner cup of each of the 6 nests I found was lined with spore stems from an unidentified ground moss, some entirely so. Bent (1953) commented on the frequent use of this plant material, noting that several observers commonly found stalks or flower stems of the "hair moss (*Polytrichum*)" lining the nest. On close examination, I found other plant materials used in some of the nest interiors, including fine bark strips, grasses, flower pedicels, and pieces of moss.

Harrison (1975) stated that clutch size ranges from 3 to 6 eggs, with 4 to 5 being typical. Each nest I found held 5 eggs. My observations suggest that at least during some seasons the breeding activities of birds within particular populations are closely synchronized. In 2 of the 3 nests I found in 1988, the first egg was laid on the same day (4 May), and the first egg was laid in the third nest only 2 days later (6 May). I found other nests containing full egg clutches on 9 May 1987 and 11 May 1988. During incubation, the female Worm-eating Warbler is a close-sitter and flushes from the nest only reluctantly when disturbed. A female I flushed from a full-egg clutch on 9 May 1987 walked away silently with fanned tail feathers and fluttering wings.

Another flushed bird flew directly to the ground in front of me. With a lowered head and body, she walked away in a curious, creeping fashion while flicking the feathers of her raised tail and calling an excited "chit" note.

Harrison (1975) stated that incubation lasts 13 days. I found newly-hatched young in nests on 20 May 1988 (Jones Gap) and on 23 May 1987 (Raven Cliff Falls Trail). One nest under observation was found empty on 3 June (1988). Bent (1953) cited F.L. Burns to the effect that young leave the nest in about 10 days and may depart much sooner if disturbed. I saw fledged young out of the nest on 5 June 1988 (Caesars Head), 13 June 1988 (Jones Gap), and 17 June 1988 (Caesars Head). Both adults feed and tend to the young. I found that caterpillars are an important mainstay of the young bird's diet. The birds reportedly rear only a single brood (Harrison, 1975).

But the birds don't breed solely in the mountains.

Sprunt and Chamberlain (1949) alluded to the possibility of Worm-eating Warblers breeding in the South Carolina coastal plain, citing references by J. J. Audubon and A. T. Wayne to possible breeding near Charleston in 1884 and 1903. It was not until much later, however, that the first occurrence of this bird in the lower coastal plain during June was documented. Hamel and Lennartz (1976) found a singing male on 8 June 1976, and 22 June 1976, in the Francis Marion National Forest in Berkeley County. They described the site as "a relatively dry forest intersected by a small drain," and as having a "mature overstory of scattered Loblolly Pine (*Pinus taeda*); a maturing midstory of Sweetgum (*Liquidambar styraciflua*), Black Gum (*Nyssa sylvatica*), and Water Oak (*Quercus nigra*). The understory was described as being "moderately dense" with Red Maple (*Acer rubrum*), Sweet Gum, Pepperbush (*Clethra alnifolia*), Switch Cane (*Arundinaria gigantea*), Wax Myrtle (*Myrica cerifera*), *Lyonia lucida*, and grape vine (*Vitis* sp.).

Since 1976 Worm-eating Warblers have been found in the coastal plain with increasing regularity. Have we been overlooking this species? Or has its range expanded? Gauthreaux (in Hamel and Lennartz, 1976) noted that a number of southern coastal plain records have been obtained from "atypical habitats." Mark Wilson found this species during the breeding season in what he considered to be typical Carolina bay habitats in Horry County, South Carolina (pers. comm.). He found territorial males in late May and early June at Cartwheel Bay Heritage Preserve and Brown Bay in 1996. He also observed an adult bird carrying food at Lewis Ocean Bay Heritage Preserve on 25 May 1990. Wilson described these sites as "dense shrub thickets with pond pines." He also noted an adjacent sand rim with "longleaf pine and turkey oak." Others have reported this species from similar habitats. Glover (1994) found this warbler during the breeding season in the upper coastal plain at the Congaree

National Monument near Kingsville. Birds were banded there in June 1994 and 1996 (J. Cely pers. comm). The 1994 bird was a female with a well-developed brood patch.

We have much to learn of the Worm-eating Warbler's distribution, habitat selection, and breeding habits in the South Carolina coastal plain. These recent observations in the lower coastal plain suggest that in appropriate habitats this species is not nearly as rare as previously supposed. But known records are still absent or extremely scarce from the coastal plain south of Charleston. Its occurrence in the outer coastal plain and piedmont appears to be sporadic, and few records exist. Additional surveys of Carolina bays and similar habitats may provide a clearer picture of this bird's status and nesting requirements outside of the mountains.

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Editor's Note: Few people can say they've found 6 Worm-eating Warbler nests, as Mr. Pitts can. But many of us can say we've heard the birds' distinctively dry trill. If you hear a male singing on territory over a 2-week period or so anywhere in South Carolina outside the mountains in June, let Dennis Forsythe, our South Carolina General Field Notes Editor, know. BW

Spring 1996 North American Migration Count in North Carolina

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The 1996 Spring North American Migration Count (NAMC) was conducted on 11 May 1996 and included reports from North Carolina for the third year. The annual date of the NAMC can be one to two weeks after many migrants have passed through some parts of North Carolina. The purpose of the count, however, is not to determine how many migrants are in a state at the peak of migration but rather to identify the density and distribution of bird species throughout the whole continent at a given point in time. Therefore, some species will be gone from some southern states and will not yet have arrived in other states and provinces farther north.

The spring NAMC is conducted annually throughout North America north of Mexico on the second Saturday in May. It was begun in 1992 by Jim Stasz, a birder in Maryland who is attempting to determine the pattern of migration in North America. Unlike traditional Christmas and spring counts, the NAMC obtains an annual "snapshot" of the continent by organizing volunteers in each state and province to count birds in an entire county on a single day.

Participating Counties

Eighteen counties reported migration counts in 1996, including 7 new ones. Reports were not received, however, from 4 counties that were on last year's report. This produced a net increase of 3 over the 15 counties in the 1995 count. Counties in this count not reported in 1995 include Chatham, Cumberland, Durham, Forsyth, Jones (reported in 1994), Orange, and Randolph. Counties represented in 1995 for which no reports were received in 1996 include Alleghany, Ashe, Polk, and Wilkes. The following is the list of counties (and county seats) for which reports were received for the 1996 NAMC in North Carolina: Avery (Newland), Brunswick (Southport), Buncombe (Asheville), Chatham (Pittsboro), Cherokee (Murphy), Cleveland (Shelby), Cumberland (Fayetteville), Durham (Durham), Forsyth (Winston-Salem), Guilford (Greensboro), Henderson (Hendersonville), Jones (Trenton), Moore (Carthage), Onslow (Jacksonville), Orange (Hillsborough), Pitt (Greenville), Randolph (Asheboro), and Transylvania (Brevard). North Carolina has 100 counties distributed over four biogeographic zones.

The number of reports in the 3 years of this state's participation in the NAMC (1994, 1995, and 1996) has been far short of the potential for

migration counts. The density and distribution of bird species during spring migration in North Carolina and the continent will be better known with the inclusion of more counties. However, the addition of 7 new counties this year has given the regions somewhat better representation. While all regions need additional coverage, it is particularly important that the north coastal region and coastal plain be represented in future counts.

Summary Data

207 participants from 18 counties reported 36,888 individual birds (count categories: 35,529 regular, 35 night, 365 stationary, 959 feeder) of 207 species for the 1996 NAMC in North Carolina.

Parties/Observers: Regular parties included 183 observers in 92 parties. Night (Owling) parties included 21 observers in 11 parties. Stationary parties included 12 observers in 10 parties. 29 feeder watchers observed 68 feeding stations.

Hours: Party hours for all categories totaled 685:20. Regular party hours totaled 578:35 and included 313:35 by foot, 253:00 by car, 5:00 by boat, 2:00 by ATV, and 5:00 by golf cart. Night (Owling) hours totaled 11:15. Stationary hours totaled 14:30. Feeder watching hours totaled 81:00.

Miles: Party miles for all categories totaled 2777.2. Regular party miles totaled 2685.7, including 210.0 by foot, 2418.2 by car, 49.5 by boat, 3.0 by ATV, and 5.0 by golf cart. Night (owling) miles totaled 91.5.

Rarities, Species of Note, and High Counts

Many of the county coordinators reported species that are rare in their county, unusual for the time of year, or present in remarkably high numbers. Most of the coordinators contributed good details on the more unusual sightings. Morning fog, afternoon thunderstorms, hail, and high winds were reported in a substantial number of counties. This may account, to some extent, for the lower number of species seen this year. In addition, there were fewer duck species, and several species that would be expected to move into the state a little later in the spring were missing from the count.

Judging from the species reported this year that were missing or scarce last year, birds normally seen in winter in much of the state were a little late in leaving. For example, 2 or more counties submitted counts of Red-breasted Mergansers, American Coots (on 6 counts), Yellow-bellied Sapsuckers, Winter Wrens, White-throated Sparrows (on 6 counts), Pine Siskins, and Evening Grosbeaks. Some species seemed to be somewhat more abundant than last year, particularly Gray Catbird and, to a lesser extent, Eastern Towhee. The coordinator for the Durham and Orange County counts reported unusually

high numbers of Swainson's Thrush. Was this a state-wide phenomenon? It will be interesting to chart these trends as more data are gained over the years.

The Avery County count again produced several species that would be considered "winter" birds in most of the state, including 4 Red-breasted Nuthatches and 3 Pine Siskins at a feeder and a Winter Wren along Profile Trail, all on Grandfather Mountain.

Several interesting species were reported from Brunswick County. Last year's single Anhinga increased to 4 in 1996; American Black Ducks (9 individuals) were seen for the fourth year, including a female and 6 ducklings on a fresh water pond on Ocean Isle Beach; 16 Red-breasted Mergansers were reported, 2 in a salt marsh seen from the Sunset Beach Causeway, and 14 in the Intracoastal Waterway near Bird Island; 2 immature Bald Eagles affirm the increasing numbers in the state; 2 lingering American Coots were spotted on Lake Metcalf on Ocean Isle Beach; and a White-rumped Sandpiper at the far east end of Ocean Isle Beach was a good find. The surprise on the count was 4 Evening Grosbeaks in a cedar grove in the Green Swamp west of Rt. 211.

Buncombe County birders noted 5 Yellow-bellied Sapsuckers and recorded 3 Winter Wrens.

Chatham County reported 2 unusually late species: Yellow-rumped Warbler and White-throated Sparrow.

Birders in Durham County reported several locally rare spring birds. A Snowy Egret and a late American Coot were spotted at the Little Creek impoundment on NC 54; a Semipalmated Plover, a Semipalmated Sandpiper, and unusually high numbers of Spotted and Least Sandpipers were at the Farrington Road sewage treatment plant. In addition, unusually high numbers of Swainson's Thrushes were recorded.

Forsyth County had a Warbling Vireo and 2 White-throated Sparrows.

Guilford County observers turned up an impressive list of remarkable species. Three Cattle Egrets made a rare appearance; 1 American Black Duck, an increasingly less common winter visitor in the county, was late in leaving; Bald Eagles successfully nested at Lake Higgins for the second year, where an adult and an immature were seen on count day; a lingering American Coot was seen; 3 Lesser Yellowlegs made an inland stopover; 2 Caspian Terns were unusual for this time of year; 3 Loggerhead Shrikes (a species of concern in the county) were noted; single male Warbling Vireos were heard and seen in 2 different locations, 1 for the fourth consecutive year in the same residential yard near Greensboro; 5 White-throated Sparrows were a little late heading north; and a total of 71 Bobolinks, not seen every year, were spotted in 2 locations.

Counters in Henderson County considered themselves lucky to turn up a

Semipalmated Plover and the state-wide count's only Common Barn Owl. Also of note were 3 Yellow-bellied Sapsuckers in the higher reaches of the county; a Winter Wren; and a flock of 26 American Pipits remaining in a field along Hooper Rd. where they winter in large numbers.

Jones County was one of several with a lingering American Coot.

Moore County reported 6 Mute Swans, part of the feral population that has bred at Wood Lake for several years. Also of interest were a single Hooded Merganser; a thoroughly described Red-breasted Merganser (also on Wood Lake); an immature Bald Eagle; an American Coot; and 8 White-throated Sparrows.

Onslow County again reported an interesting collection of good species. 14 Northern Gannets and a Great Cormorant were a little late leaving. Along with a White Ibis, they were the only individuals of those species counted in the state. Counters considered a Least Bittern to be an excellent find in the county. A Snow Goose, perhaps the one that has spent the last 5 winters at Catherine's Lake, hung around for the count; 13 Black Ducks probably represent a breeding population in the county; a Red-breasted Merganser and 2 Ruddy Ducks lingered; a Broad-winged Hawk was a good find; and an American Coot was seen. A good selection of shorebird species was turned up, including 2 Black-necked Stilts (unusual for the county); Eurasian Collared Doves were seen again at the colony in N. Topsail Beach; a male Scarlet Tanager singing along the White Oak River was a good bird for the county, and 3 White-throated Sparrows had not departed by count day.

Orange County had several unusually late birds: the only Northern Harrier on the statewide count, 6 Yellow-rumped Warblers and 2 White-throated Sparrows. It was among several counties to report Bobolinks.

Pitt County birders reported a Gadwall in River Park North. It had been present throughout the winter and was believed to be sick or injured. They also recorded a White-throated Sparrow and the count's only Mississippi Kite.

Transylvania County provided the only Peregrine Falcon in the state-wide count, an individual at the known nest site on Cold Mountain near Lake Toxaway. A Black-billed Cuckoo was one of 5 seen during count week but the only one reported in the state. An Olive-sided Flycatcher, a rarity, was clearly heard for several minutes by an experienced birder at an elevation of about 3400 feet on See Off Mountain. Other interesting birds include several species normally seen only in winter at lower elevations but regular here, including 3 Winter Wrens and 3 Golden-crowned Kinglets. A Northern Parula was spotted at a hummingbird feeder, and a suet feeder attracted both a Black-throated Blue Warbler and 2 Yellow-throated Warblers! Also still coming to feeders

were 4 Purple Finches and 4 Pine Siskins near Lake Toxaway and 4 Evening Grosbeaks in the Balsam Grove area, the latter sticking around until May 17.

County Records

The NAMC may cover the entire county rather than a specified count circle or location. The NAMC uses the following definitions for the 4 reporting categories: "regular" - observers move from one place to another within a relatively large part of a county during the period from dawn to dusk; "night" (formerly "owling") - observers tally all species seen or heard from midnight until dawn and from dusk to midnight; "stationary" - observers spend a significant amount of time from dawn until dusk at 1 observation point and count birds that move past; and "feeder watching" - observers spend a minimum of an hour at 1 location counting birds that are attracted to a feeding station or stations, making an attempt to count the birds only once. All data for individuals of each species reported below refer to regular observations unless otherwise specified as night (owling), stationary, or feeder watching data.

Avery County, NC. (Mountains)

5:35 AM to 5 PM. Weather: temperature 70° AM; calm predawn, wind 0-3 mph AM, light noon, westerly 2-3 PM; clouds 30% dawn 40% AM, 100% PM, 85% dusk; precipitation none AM, heavy storm PM, none dusk. Regular: 3 observers in 2 parties; regular hours foot 5:00; regular hours car 6:30; regular miles foot 3.5; regular miles car 56. No night (owling) parties. No stationary parties. No feeder watchers. County summary: 11:30 party hours; 59.5 party miles, 3 participants.

Double-crested Cormorant 1, Canada Goose 2, Turkey Vulture 2, Red-tailed Hawk 1, Mourning Dove 5, Chimney Swift 2, Ruby-throated Hummingbird 2 (feeder), Downy Woodpecker 1, Hairy Woodpecker 1, Northern Flicker 2, Pileated Woodpecker 2, Eastern Phoebe 1, Great Crested Flycatcher 3, Northern Rough-winged Swallow 2, Barn Swallow 4, Blue Jay 17, American Crow 26, Common Raven 5, Carolina Chickadee 11, Tufted Titmouse 22, Red-breasted Nuthatch 4, Carolina Wren 2, House Wren 2, Winter Wren 1, Eastern Bluebird 1, Veery 4, Wood Thrush 9, American Robin 28, Gray Catbird 20, European Starling 9, Solitary Vireo 13, Red-eyed Vireo 22, Northern Parula 3, Chestnut-sided Warbler 18, Black-throated Blue Warbler 20, Black-throated Green Warbler 3, Ovenbird 16, Common Yellowthroat 5, Hooded Warbler 3, Canada Warbler 8, Scarlet Tanager 4, Northern Cardinal 13, Rose-breasted Grosbeak 4, Indigo Bunting 6, Eastern Towhee 39, Chipping

Sparrow 2, Field Sparrow 1, Song Sparrow 20, Dark-eyed Junco 24, Red-winged Blackbird 1, Common Grackle 5, House Finch 1, Pine Siskin 3 (feeder), American Goldfinch 7.

Total: 49 species, 451 individuals (446 regular, 0 night, 0 stationary, 5 feeder).

County Compiler: Margery R. Plymire, Box 843, Linville Falls, NC 28646.
Participants: Margery Plymire, Stewart Skeate, Willy Summer.

Brunswick County, NC. (Coast)

5:30 AM to 9 PM. Weather: temperature 80° AM, 83° noon, 85° PM, 80° dusk, 78° post-dusk; wind not recorded; clouds not recorded; precipitation not recorded. Regular: 22 observers in 8 parties; regular hours foot 13:15; regular hours car 25:45; regular hours boat 5:00; regular hours golf cart 5:00; regular hours ATV 2:00; regular miles foot 10; regular miles car 154; regular miles boat 49.5; regular miles golf cart 5; regular miles ATV 3. Night (owling): 3 observers in 2 parties; night hours 2:00; night miles 22. Stationary: 1 observers in 1 party; stationary hours 1:00. Feeder watchers: 1 observer watching 9 feeding stations; feeder watching hours 4:00. County summary: 58 party hours; 243.5 party miles, 26 participants.

Common Loon 2, Brown Pelican 93, Double-crested Cormorant 213, Anhinga 5, Great Blue Heron 15, Great Egret 100, Snowy Egret 45, Little Blue Heron 2, Tricolored Heron 7, Cattle Egret 21, Green Heron 37, Black-crowned Night Heron 2, Yellow-crowned Night Heron 3, Night Heron sp. 4, White Ibis 40, Canada Goose 29, Wood Duck 13, American Black Duck 9, Mallard 23, Blue-winged Teal 2, Red-breasted Merganser 16, Black Vulture 8, Turkey Vulture 30, Osprey 22, Bald Eagle 2, Northern Harrier 1, Sharp-shinned Hawk 2, Red-shouldered Hawk 8, Red-tailed Hawk 6, Buteo sp. 2, American Kestrel 2, Northern Bobwhite 12 (10 regular, 2 feeder), Clapper Rail 7, Common Moorhen 5, American Coot 2, Black-bellied Plover 89, Wilson's Plover 17, Semi-palmated Plover 296, Killdeer 14, American Oystercatcher 23, Black-necked Stilt 2, Greater Yellowlegs 12, Lesser Yellowlegs 1, Willet 40, Spotted Sandpiper 5, Whimbrel 35, Ruddy Turnstone 9, Red Knot 490, Sanderling 121, Semipalmated Sandpiper 8, Western Sandpiper 16, Least Sandpiper 8, White-rumped Sandpiper 1, Dunlin 181, Peep sp. 23, Short-billed Dowitcher 286, Dowitcher sp. 15, Laughing Gull 141, Bonaparte's Gull 2, Ring-billed Gull 61, Herring Gull 5, Gull sp. 60, Caspian Tern 3, Royal Tern 112, Sandwich Tern 7, Common Tern 3, Forster's Tern 1, Sterna

sp. 2, Least Tern 98, Black Skimmer 75, Rock Dove 22, Mourning Dove 146 (144 regular, 2 feeder), Yellow-billed Cuckoo 11, Great Horned Owl 2, Common Nighthawk 5, Chuck-Will's Widow 11, Whip-poor-will 1, Chimney Swift 61, Ruby-throated Hummingbird 3 (feeder), Belted Kingfisher 2, Red-headed Woodpecker 45 (37 regular, 3 stationary, 5 feeder), Red-bellied Woodpecker 24 (22 regular, 2 feeder), Downy Woodpecker 10 (8 regular, 2 feeder), Red-cockaded Woodpecker 2, Northern Flicker 15 (14 regular, 1 stationary), Pileated Woodpecker 7, Eastern Wood-Pewee 19, Acadian Flycatcher 23, Great Crested Flycatcher 132 (128 regular, 2 stationary, 2 feeder), Eastern Kingbird 20, Purple Martin 71, Tree Swallow 3, Northern Rough-winged Swallow 31, Barn Swallow 138, Blue Jay 62 (48 regular, 2 stationary), American Crow 26 (24 regular, 2 feeder), Fish Crow 31 (29 regular, 2 stationary, 12 feeder), Crow sp. 12, Carolina Chickadee 30 (27 regular, 3 feeder), Tufted Titmouse 53 (45 regular, 8 feeder), White-breasted Nuthatch 2, Brown-headed Nuthatch 28 (26 regular, 2 feeder), Carolina Wren 44 (42 regular, 2 feeder), Blue-gray Gnatcatcher 39, Eastern Bluebird 37 (36 regular, 1 stationary), Wood Thrush 11, American Robin 17 (16 regular, 1 feeder), Gray Catbird 4, Northern Mockingbird 120 (115 regular, 1 stationary, 4 feeder), Brown Thrasher 22 (18 regular, 2 stationary, 2 feeder), Loggerhead Shrike 9, European Starling 58, White-eyed Vireo 39, Yellow-throated Vireo 10, Red-eyed Vireo 17, Northern Parula 20, Black-throated Green Warbler 4, Yellow-throated Warbler 9, Pine Warbler 46, Prairie Warbler 35, Blackpoll Warbler 1, Black-and-white Warbler 1, American Redstart 3, Prothonotary Warbler 34, Worm-eating Warbler 8, Swainson's Warbler 3, Ovenbird 11, Louisiana Waterthrush 3, Kentucky Warbler 1, Common Yellowthroat 29, Hooded Warbler 9, Yellow-breasted Chat 13, Summer Tanager 36, Northern Cardinal 98 (94 regular, 2 stationary, 2 feeder), Blue Grosbeak 15 (14 regular, 1 stationary), Indigo Bunting 74, Painted Bunting 15, Eastern Towhee 37, Bachman's Sparrow 3, Chipping Sparrow 3, Field Sparrow 4, Red-winged Blackbird 106, Eastern Meadowlark 9, Boat-tailed Grackle 281, Common Grackle 52, Brown-headed Cowbird 16, Orchard Oriole 32, House Finch 4, American Goldfinch 2 (feeder), Evening Grosbeak 4, House Sparrow 15 (14 regular, 1 stationary).

Total: 144 species, 4562 individuals (4484 regular, 0 night, 20 stationary, 58 feeder).

County Compiler: Diane Hahn, 269 Sea Trail Dr., Sunset Beach, NC 28468.
Participants: Sue Baer, Peggy Bass, Bill Brokow, Pat Brokow, Dick Brown, Judy Brown, Carolyn Bush, Norman Bush, Dixie Dew, Dan Drega, Diane

Hahn, Dave Harper, Marge Harper, Betty Hewel, Kathy Higgins, Lee Jackson, Kitty Kosh, Greg Massey, Bill McDavit, Mary McDavit, Carolyn Palmer, Lynn Petch, Jane Ranney, Bruce Smithson, Bernie Swanekamp, Harriet Whitsett.

Buncombe County, NC. (Mountains)

6:30 AM to 5:30 PM. Weather: temperature 59° predawn, 60° dawn, 60° AM, 62° noon, 65° PM, 62° dusk; wind 1 mph predawn, 4-7 mph dawn, 8 - 12 mph AM, 13-18 mph noon, 4 - 7 mph PM, 4 - 7 mph dusk; clouds fog predawn, 10% dawn, 50% AM, 90% noon, 100% PM, 50% dusk; precipitation 0 AM, rain noon, rain PM ending before dusk. Regular: 9 observers in 5 parties; regular hours foot 15:00; regular hours car 15:00; regular miles foot 4; regular miles car 155. No night (owling) parties. No stationary parties. Feeder watchers: 1 observer watching 1 feeding station; feeder watching hours 4:00. County summary: 19 party hours; 155 party miles; 9 participants.

Double-crested Cormorant 1, Green Heron 4, Canada Goose 1, Turkey Vulture 4, Sharp-shinned Hawk 1, Ruffed Grouse 1, Northern Bobwhite 7, Killdeer 1, Spotted Sandpiper 5, Least Sandpiper 1, Mourning Dove 21, (16 regular, 5 feeder), Chimney Swift 30, Ruby-throated Hummingbird 6 (5 regular, 1 feeder), Red-bellied Woodpecker 9, Yellow-bellied Sapsucker 5 (feeder), Downy Woodpecker 13, Hairy Woodpecker 5, Northern Flicker 4, Pileated Woodpecker 7, Eastern Wood-Pewee 6, Acadian Flycatcher 4, Empidonax sp. 1, Eastern Phoebe 10, Great Crested Flycatcher 1, Eastern Kingbird 1, Tree Swallow 8, Northern Rough-winged Swallow 5, Bank Swallow 3, Barn Swallow 20, Blue Jay 40, American Crow 80, Carolina Chickadee 26 (16 regular, 10 feeder), Tufted Titmouse 31 (27 regular, 4 feeder), White-breasted Nuthatch 5, Carolina Wren 28, House Wren 8, Winter Wren 3, Blue-gray Gnatcatcher 2, Eastern Bluebird 22 (21 regular, 1 feeder), Wood Thrush 25, American Robin 40, Gray Catbird 21, Northern Mockingbird 22, Brown Thrasher 9, Cedar Waxwing 30, European Starling 42, White-eyed Vireo 1, Solitary Vireo 7, Yellow-throated Vireo 5, Red-eyed Vireo 34, Northern Parula 16, Yellow Warbler 16, Chestnut-sided Warbler 11, Magnolia Warbler 1, Cape May Warbler 1, Black-throated Blue Warbler 10, Black-throated Green Warbler 6, Blackburnian Warbler 6, Yellow-throated Warbler 3, Pine Warbler 2, Blackpoll Warbler 2, Cerulean Warbler 15, Black-and-white Warbler 8, American Redstart 13, Worm-eating Warbler 1, Ovenbird 23, Northern Waterthrush 1, Common Yellowthroat 4, Hooded Warbler 3, Scarlet Tanager 17, Northern Cardinal 43, Rose-breasted Grosbeak 5, Indigo Bunting 20, Eastern Towhee 36, Chipping Sparrow 6, Field Sparrow 2, Song Sparrow 37,

Dark-eyed Junco 7, Bobolink 4, Red-winged Blackbird 15, Eastern Meadowlark 6, Common Grackle 17, Brown-headed Cowbird 12, Orchard Oriole 4, Baltimore Oriole 6, House Finch 31 (26 regular, 5 feeder), American Goldfinch 43 (41 regular, 2 feeder), House Sparrow 1.

Total: 90 species, 1115 individuals (1082 regular, 0 night, 0 stationary, 33 feeder).

County Compiler: Ruth E. Young, P.O. Box 836, Fairview, NC 28730.

Participants: Edward Caldwell, Sally Colburn, Kathleen Ford Walters, Emilie Gardner, Nancy Herbert, Betty Holden, Peggy Lasher, Don Meldrum, Ruth Young.

Chatham County, NC. (Piedmont)

6 AM to 2 PM. Weather: temperature 65° AM, 85° PM; wind light AM, windy PM; clouds 50% AM, 75% PM; precipitation: rain scattered AM, thunderstorm PM. Regular: 8 observers in 4 parties; regular hours foot 24:00; regular hours car 5:00; regular miles foot 16; regular miles car 52. Night (owling): 3 observers in 1 party; night hours 0:30, night miles 0. No stationary parties. No feeder watchers. County summary: 29:30 party hours; 68 party miles, 8 participants.

Double-crested Cormorant 67, Great Blue Heron 9, Green Heron 5, Canada Goose 17, Wood Duck 23, Mallard 12, Black Vulture 2, Turkey Vulture 31, Osprey 4, Bald Eagle 8 (6 adults, 2 immatures), Sharp-shinned Hawk 1, Red-shouldered Hawk 2, Broad-winged Hawk 3, Red-tailed Hawk 7, Northern Bobwhite 3, Killdeer 1, Ring-billed Gull 8, Rock Dove 2, Mourning Dove 47, Yellow-billed Cuckoo 6, Great Horned Owl 1 (night), Barred Owl 4 (3 regular, 1 night), Whip-poor-will 3 (night), Chimney Swift 38, Ruby-throated Hummingbird 9, Belted Kingfisher 3, Red-headed Woodpecker 6, Red-bellied Woodpecker 26, Downy Woodpecker 10, Hairy Woodpecker 3, Northern Flicker 9, Pileated Woodpecker 3, Eastern Wood-Pewee 18, Acadian Flycatcher 14, Eastern Phoebe 7, Great Crested Flycatcher 13, Eastern Kingbird 10, Purple Martin 16, Northern Rough-winged Swallow 3, Cliff Swallow 3, Barn Swallow 14, Blue Jay 23, American Crow 54, Fish Crow 1, Carolina Chickadee 48, Tufted Titmouse 55, White-breasted Nuthatch 1, Brown-headed Nuthatch 8, Carolina Wren 24, House Wren 1, Blue-gray Gnatcatcher 46, Eastern Bluebird 45, Veery 1, Swainson's Thrush 2, Wood Thrush 12, American Robin 58, Gray Catbird 2, Northern Mockingbird 19,

Brown Thrasher 11, European Starling 29, White-eyed Vireo 6, Solitary Vireo 1, Yellow-throated Vireo 2, Red-eyed Vireo 46, Northern Parula 10, Cape May Warbler 1, Black-throated Blue Warbler 1, Yellow-rumped Warbler 2, Yellow-throated Warbler 7, Pine Warbler 24, Prairie Warbler 24, Black and White Warbler 7, American Redstart 4, Prothonotary Warbler 9, Ovenbird 14, Northern Waterthrush 1, Louisiana Waterthrush 1, Kentucky Warbler 1, Common Yellowthroat 28, Hooded Warbler 23, Yellow-breasted Chat 24, Summer Tanager 15, Scarlet Tanager 3, Northern Cardinal 45, Blue Grosbeak 22, Indigo Bunting 61, Eastern Towhee 16, Chipping Sparrow 15, Field Sparrow 8, White-throated Sparrow 1, Red-winged Blackbird 35, Eastern Meadowlark 4, Common Grackle 101, Brown-headed Cowbird 25, Orchard Oriole 6, Baltimore Oriole 3, House Finch 11, American Goldfinch 89, House Sparrow 7.

Total: 99 species, 1615 individuals (1610 regular, 5 night, 0 stationary, 0 feeder).

County Compiler: Will Cook, 418 Sharon Rd., Chapel Hill, NC, 27514.

Participants: Anson Cooke, Catherine Cooke, Maurice Graves, Steve Graves, Joe Harris, Mike Schultz, Lois Schultz, Doug Shadwick.

Cherokee County, NC. (Mountains)

6 AM to 4 PM. Weather: temperature 49° predawn, 49° dawn, 70° AM, 60° PM, 50° dusk; wind light AM, 10 - 15 mph noon, westerly PM; clouds 50% predawn, fog dawn, 100% noon, 80% PM; precipitation: none AM, rain noon, clearing PM. Regular: 2 observers in 1 party; regular hours foot 6:00; regular hours car 3:00; regular miles foot 10; regular miles car 35. No night (owling) parties. No stationary parties. No feeder watchers. County summary: 9:00 party hours; 45 party miles, 2 participants.

Canada Goose 4, Wood Duck 2, Turkey Vulture 2, Broad-winged Hawk 1, Ruffed Grouse 3, Northern Bobwhite 6, Killdeer 4, Rock Dove 3, Mourning Dove 16, Barred Owl 2, Whip-Poor-Will 1, Chimney Swift 36, Ruby-throated Hummingbird 4, Belted Kingfisher 1, Red-bellied Woodpecker 4, Downy Woodpecker 3, Northern Flicker 2, Pileated Woodpecker 5, Eastern Wood-Pewee 3, Eastern Phoebe 10, Great Crested Flycatcher 8, Eastern Kingbird 5, Purple Martin 23, Northern Rough-winged Swallow 4, Cliff Swallow 4, Barn Swallow 35, Blue Jay 20, American Crow 30, Carolina Chickadee 14, Tufted Titmouse 11, White-breasted Nuthatch 2, Carolina Wren

20, Eastern Bluebird 12, Wood Thrush 5, American Robin 42, Gray Catbird 10, Northern Mockingbird 6, Brown Thrasher 7, White-eyed Vireo 7, Red-eyed Vireo 9, Northern Parula 3, Yellow Warbler 1, Black-and-white Warbler 2, Ovenbird 2, Common Yellowthroat 2, Hooded Warbler 7, Yellow-breasted Chat 6, Scarlet Tanager 4, Northern Cardinal 39, Indigo Bunting 40, Eastern Towhee 26, Chipping Sparrow 7, Field Sparrow 5, Song Sparrow 54, Red-winged Blackbird 16, Eastern Meadowlark 4, Common Grackle 23, Brown-headed Cowbird 4, Orchard Oriole 5, House Finch 16, American Goldfinch 6, House Sparrow 12.

Total: 63 species, 671 individuals (671 regular, 0 night, 0 stationary, 0 feeder).

County Compilers: Bill Bolte and Jan Bolte, Rt. 2, Box 175A, Murphy, NC 28906.

Participants: Bill Bolte and Jan Bolte.

Cleveland County, NC. (Mountains and Piedmont)

7:45 AM to 11:47 AM. Weather: temperature 58° dawn, 64° AM, 64° noon, 72° PM, 75° dusk; wind westerly 5 - 10 mph dawn, 10 - 15W AM, 10 - 15W noon, 15 - 20W PM, 10 - 15W dusk; clouds 100% all day, clearing to 30% at dusk; precipitation: none dawn, light rain AM, rain noon, showers PM. Regular: 4 observers in 1 party; regular hours foot 3:00; regular hours car 1:00; regular miles foot 0.25; regular miles car 17. No night (owling) parties. No stationary parties. No feeder watchers. County summary: 4:00 party hours; 17.25 party miles, 4 participants.

Canada Goose 20, Mallard 2, Black Vulture 2, Turkey Vulture 1, Red-tailed Hawk 1, Northern Bobwhite 5, Killdeer 7, Peep sp. 1, Rock Dove 5, Mourning Dove 47, Common Barn Owl 1, Chimney Swift 27, Red-bellied Woodpecker 9, Downy Woodpecker 2, Pileated Woodpecker 1, Eastern Wood-Pewee 3, Acadian Flycatcher 1; Eastern Phoebe 2, Great Crested Flycatcher 1, Eastern Kingbird 5, Horned Lark 3, Purple Martin 15, Barn Swallow 11, Blue Jay 11, American Crow 27, Carolina Chickadee 6, Tufted Titmouse 5, Carolina Wren 5, House Wren 1, Blue-gray Gnatcatcher 2, Eastern Bluebird 15, Wood Thrush 3, American Robin 26, Gray Catbird 4, Northern Mockingbird 23, Brown Thrasher 13, Cedar Waxwing 180; Loggerhead Shrike 2; European Starling 49, Red-eyed Vireo 12, Pine Warbler 3, Common Yellowthroat 6, Yellow-breasted Chat 2, Northern Cardinal 19, Blue Grosbeak 9, Indigo

Bunting 19, Eastern Towhee 5, Chipping Sparrow 6, Field Sparrow 8, Grasshopper Sparrow 5, Song Sparrow 3, Red-winged Blackbird 24, Eastern Meadowlark 21, Common Grackle 32, Brown-headed Cowbird 5, Orchard Oriole 2, House Finch 6, American Goldfinch 12, House Sparrow 5.

Total: 59 species, 751 individuals (751 regular, 0 night, 0 stationary, 0 feeder).

County Compiler: Jo Ann Martin, P.O. Box 242, Ellenboro, NC 28040.

Participants: Jo Ann Martin, Dot McMurray, Linda Stoddard, Pat Wilkison.

Cumberland County, NC. (Coastal Plain)

7:15 AM to 11:45 AM. Weather: temperature 80° AM; wind southwesterly 15 mph AM; clouds 0% AM; precipitation: none. Regular: 1 observer in 1 party; regular hours foot 0:30; regular hours car 1:45; regular miles foot 1; regular miles car 11.5. Stationary: 2 observers in 1 party; stationary hours 1:30. No night (owling). No feeder watching. County summary: 3:45 party hours; 12.5 party miles, 3 participants.

Great Blue Heron 1, Cattle Egret 2, Green Heron 2 (stationary), Canada Goose 21 (19 regular, 2 stationary), Wood Duck 3 (stationary), Mallard 2, Turkey Vulture 1, Osprey 1, Red-shouldered Hawk 2 (1 regular, 1 stationary), Mourning Dove 21 (20 regular, 1 stationary), Yellow-billed Cuckoo 2, Chimney Swift 8 (stationary), Ruby-throated Hummingbird 2 (stationary), Red-bellied Woodpecker 4 (3 regular, 1 stationary), Northern Flicker 2 (1 regular, 1 stationary), Pileated Woodpecker 1 (stationary), Eastern Wood-Pewee 3, Acadian Flycatcher 3, Great Crested Flycatcher 8 (7 regular, 1 stationary), Northern Rough-winged Swallow 2, Blue Jay 2 (1 regular, 1 stationary), American Crow 7 (2 regular, 5 stationary), Fish Crow 4, Carolina Chickadee 2, Tufted Titmouse 5 (4 regular, 1 stationary), Brown-headed Nuthatch 1 (stationary), Carolina Wren 7 (6 regular, 1 stationary), Eastern Bluebird 10 (8 regular, 2 stationary), Wood Thrush 3 (2 regular, 1 stationary), Gray Catbird 6 (3 regular, 3 stationary), Northern Mockingbird 12 (10 regular, 2 stationary), Brown Thrasher 1 (stationary), Loggerhead Shrike 1, European Starling 19 (18 regular, 1 stationary), White-eyed Vireo 1, Yellow-throated Vireo 1, Red-eyed Vireo 2, Yellow-throated Warbler 2, Pine Warbler 1, Common Yellowthroat 1, Summer Tanager 3 (1 regular, 2 stationary), Northern Cardinal 8 (6 regular, 2 stationary), Blue Grosbeak 5, Indigo Bunting 5, Eastern Towhee 7 (6 regular, 1 stationary), Chipping Sparrow 8 (5 regular, 3 stationary), Red-winged Blackbird 13 (12 regular, 1 stationary), Common Grackle 33 (30 regular, 3 stationary), Brown-headed Cowbird 1, Orchard

Oriole 2, House Finch 1 (stationary), American Goldfinch 2 (stationary), House Sparrow 5 (4 regular, 1 stationary).

Total: 53 species, 272 individuals (214 regular, 0 night, 58 stationary, 0 feeder).

County Compiler: Philip J. Crutchfield, 5559 Hedrick Dr., Fayetteville, NC 28303.

Participants: Philip Crutchfield, Louis Pulsipher, Susan Pulsipher.

Durham County, NC. (Piedmont)

6:15 AM to 5 PM. Weather: temperature 65° AM, 85° PM; wind light AM, windy PM; clouds 50% AM, 75% PM; precipitation: scattered showers AM, thunderstorm PM. Regular: 6 observers in 4 parties; regular hours foot 17:00; regular hours car 6:00; regular miles foot 12; regular miles car 92. No night (owling). No stationary parties. No feeder watchers. County summary: 23 party hours; 104 party miles, 6 participants.

Great Blue Heron 5, Snowy Egret 1, Green Heron 10, Canada Goose 45, Wood Duck 6, Mallard 12, Black Vulture 1, Turkey Vulture 13, Bald Eagle 3 (1 adult, 2 immature), Red-shouldered Hawk 6, Broad-winged Hawk 1, Red-tailed Hawk 4, American Coot 1, Semipalmated Plover 1, Killdeer 23, Solitary Sandpiper 4, Spotted Sandpiper 10, Semipalmated Sandpiper 1, Least Sandpiper 13, Rock Dove 9, Mourning Dove 32, Yellow-billed Cuckoo 1, Chimney Swift 49, Ruby-throated Hummingbird 8, Belted Kingfisher 1, Red-headed Woodpecker 11, Red-bellied Woodpecker 19, Downy Woodpecker 14, Hairy Woodpecker 1, Northern Flicker 4, Pileated Woodpecker 3, Eastern Wood-Pewee 4, Acadian Flycatcher 27, Eastern Phoebe 8, Great Crested Flycatcher 10, Eastern Kingbird 8, Purple Martin 4, Northern Rough-winged Swallow 12, Barn Swallow 19, Blue Jay 17, American Crow 38, Fish Crow 3, Carolina Chickadee 27, Tufted Titmouse 61, White-breasted Nuthatch 4, Brown-headed Nuthatch 3, Carolina Wren 34, House Wren 3, Blue-gray Gnatcatcher 38, Eastern Bluebird 18, Veery 1, Swainson's Thrush 9, Wood Thrush 10, American Robin 25, Gray Catbird 5, Northern Mockingbird 33, Brown Thrasher 7, European Starling 63, White-eyed Vireo 1, Yellow-throated Vireo 4, Red-eyed Vireo 27, Northern Parula 15, Yellow Warbler 2, Black-throated Blue Warbler 3, Yellow-throated Warbler 1, Pine Warbler 9, Prairie Warbler 3, Blackpoll Warbler 1, Black-and-white Warbler 1, American Redstart 14, Prothonotary Warbler 7, Ovenbird 7, Northern

Waterthrush 2, Louisiana Waterthrush 2, Kentucky Warbler 4, Common Yellowthroat 6, Hooded Warbler 5, Yellow-breasted Chat 1, Summer Tanager 11, Scarlet Tanager 6, Northern Cardinal 61, Rose-breasted Grosbeak 1, Blue Grosbeak 4, Indigo Bunting 29, Eastern Towhee 36, Chipping Sparrow 4, Field Sparrow 6, Song Sparrow 1, Swamp Sparrow 1, Red-winged Blackbird 18, Eastern Meadowlark 1, Common Grackle 122, Brown-headed Cowbird 19, Orchard Oriole 1, Baltimore Oriole 1, House Finch 14, American Goldfinch 34, House Sparrow 32.

Total: 98 species, 1320 individuals (1320 regular, 0 night, 0 stationary, 0 feeder).

County Compiler: Will Cook, 418 Sharon Rd., Chapel Hill, NC 27514.

Participants: Kent Fiala, Carol Hamilton, Betty King, Roger Kohn, Henry Link, Barbara Roth.

Forsyth County, NC. (Piedmont)

6:15 AM to 8:30 PM. Weather: temperature 65° AM, 82° PM; wind 16SW AM, windy PM; clouds 50% AM, 100% PM, 80% dusk; precipitation: none AM, thunderstorm PM. Regular: 2 observers in 1 party; regular hours foot 12:00; regular hours car 2:00; regular miles foot 4.5; regular miles car 40. No night (owling). No stationary parties. Feeder watchers: 2 observers watching 8 feeding stations; feeder watching hours 3:00. County summary: 17 party hours; 44.5 party miles, 4 participants.

Canada Goose 21, Mallard 15, Sharp-shinned Hawk 1, Cooper's Hawk 2, Red-tailed Hawk 3, Semipalmated Plover 2, Killdeer 9, Solitary Sandpiper 20, Spotted Sandpiper 13, Least Sandpiper 13, Rock Dove 4, Mourning Dove 83 (74 regular, 9 feeder), Great Horned Owl 1, Common Nighthawk 5, Chimney Swift 62, Ruby-throated Hummingbird 5 (3 regular, 2 feeder), Red-bellied Woodpecker 19, Downy Woodpecker 2 (1 regular, 1 feeder), Hairy Woodpecker 1, Northern Flicker 8, Eastern Wood-Pewee 2, Acadian Flycatcher 1, Eastern Phoebe 4, Great Crested Flycatcher 2, Eastern Kingbird 3, Purple Martin 17, Northern Rough-winged Swallow 8, Barn Swallow 10, Blue Jay 25, American Crow 28, Carolina Chickadee 23, Tufted Titmouse 30 (29 regular, 1 feeder), White-breasted Nuthatch 3, Carolina Wren 19 (17 regular, 2 feeder), House Wren 2, Eastern Bluebird 11, Veery 3, Swainson's Thrush 17, Wood Thrush 6, American Robin 92 (91 regular, 1 feeder), Gray Catbird 17, Northern Mockingbird 20, Brown Thrasher 10 (9 regular, 1

feeder), Cedar Waxwing 82, European Starling 164, White-eyed Vireo 1, Warbling Vireo 1, Red-eyed Vireo 15, Northern Parula 1, Yellow Warbler 3, Magnolia Warbler 1, Black-throated Blue Warbler 1, Yellow-rumped Warbler 4, Prairie Warbler 1, Bay-breasted Warbler 1, Black-and-white Warbler 1, American Redstart 4, Prothonotary Warbler 1, Ovenbird 1, Common Yellowthroat 6, Summer Tanager 1, Scarlet Tanager 4, Northern Cardinal 49 (42 regular, 7 feeder), Rose-breasted Grosbeak 1, Blue Grosbeak 6, Indigo Bunting 1 (feeder), Eastern Towhee 13 (11 regular, 2 feeder), Chipping Sparrow 7 (6 regular, 1 feeder), Field Sparrow 2, Song Sparrow 9, White-throated Sparrow 2 (1 regular, 1 feeder), Red-winged Blackbird 12, Eastern Meadowlark 2, Common Grackle 108, Brown-headed Cowbird 13 (10 regular, 3 feeder), Orchard Oriole 1, Baltimore Oriole 3, House Finch 17 (12 regular, 5 feeder), American Goldfinch 11 (9 regular, 2 feeder), House Sparrow 2.

Total: 81 species, 1204 individuals (1165 regular, 0 night, 0 stationary, 39 feeder).

County Compiler: David Disher, 4145 Chatham Hill Dr., Winston-Salem, NC 27104.

Participants: Doug Deneve, Dolores Foutch, Wally Foutch, Lloyd Ramsey.

Guilford County, NC. (Piedmont)

4 AM to 8:15 PM. Weather: temperature 65° AM, 82° PM; wind 16SW AM, gusts to 60 mph PM; clouds 50% AM, 100% PM, 80% dusk; precipitation: none AM, thunderstorm PM. Regular: 20 observers in 8 parties; regular hours foot 37:35; regular hours car 30:30; regular miles foot 33.5; regular miles car 435.3. Night (owling): 3 observers in 2 parties; night hours 3:00, night miles 53. Stationary: 1 observer in 1 party; stationary hours 2:00. Feeder watchers: 3 observers watching 9 feeding stations; feeder watching hours 12:30. County summary: 85:35 party hours; 521.8 party miles, 23 participants.

Double-crested Cormorant 29, Great Blue Heron 2, Cattle Egret 3, Green Heron 8, Yellow-crowned Night Heron 2, Canada Goose 213 (206 regular, 7 feeder), Wood Duck 1, American Black Duck 1, Mallard 151, Black Vulture 15, Turkey Vulture 20, Osprey 2, Bald Eagle 2 (1 adult, 1 immature), Sharp-shinned Hawk 1, Cooper's Hawk 1, Red-shouldered Hawk 2, Red-tailed Hawk 10, American Kestrel 1, American Coot 1, Killdeer 25, Lesser Yellowlegs 3, Solitary Sandpiper 1, Spotted Sandpiper 13, Semipalmated

Sandpiper 1, Least Sandpiper 8, Ring-billed Gull 17, Caspian Tern 2, Rock Dove 51, Mourning Dove 294 (275 regular, 6 stationary, 13 feeder), Yellow-billed Cuckoo 3, Eastern Screech Owl 2, Barred Owl 3 (1 regular, 2 night), Chimney Swift 188 (186 regular, 2 feeder), Ruby-throated Hummingbird 8, Belted Kingfisher 7, Red-headed Woodpecker 4, Red-bellied Woodpecker 48 (44 regular, 2 stationary, 2 feeder), Downy Woodpecker 12 (11 regular, 1 feeder), Hairy Woodpecker 1, Northern Flicker 17, Pileated Woodpecker 2, Eastern Wood-Pewee 19, Acadian Flycatcher 5, Eastern Phoebe 13 (11 regular 2 feeder), Great Crested Flycatcher 24, Eastern Kingbird 41, Purple Martin 62, Northern Rough-winged Swallow 23, Bank Swallow 4, Barn Swallow 105, Blue Jay 117 (103 regular, 6 stationary, 8 feeder), American Crow 137 (116 regular, 4 stationary, 17 feeder), Fish Crow 1, Carolina Chickadee 106 (96 regular, 10 feeder), Tufted Titmouse 84 (74 regular, 6 stationary, 4 feeder), White-breasted Nuthatch 12, Brown-headed Nuthatch 33, Carolina Wren 68 (65 regular, 3 feeder), House Wren 7, Blue-gray Gnatcatcher 31, Eastern Bluebird 96 (94 regular, 2 feeder), Veery 7, Swainson's Thrush 15, Wood Thrush 45 (44 regular, 1 feeder), American Robin 369 (351 regular, 10 stationary, 8 feeder), Gray Catbird 36, Northern Mockingbird 150 (144 regular, 4 stationary, 2 feeder), Brown Thrasher 44 (39 regular, 5 feeder), Cedar Waxwing 275, Loggerhead Shrike 3, European Starling 406 (389 regular, 12 stationary, 5 feeder), White-eyed Vireo 1, Solitary Vireo 1, Warbling Vireo 2, Red-eyed Vireo 74 (73 regular, 1 stationary), Northern Parula 4, Yellow Warbler 4, Chestnut-sided Warbler 1, Magnolia Warbler 3, Black-throated Blue Warbler 6, Yellow-rumped Warbler 4, Black-throated Green Warbler 3, Pine Warbler 16, Prairie Warbler 4, Bay-breasted Warbler 4, Blackpoll Warbler 4, Black-and-white Warbler 2, American Redstart 21, Prothonotary Warbler 1, Worm-eating Warbler 1, Ovenbird 10, Louisiana Waterthrush 1, Common Yellowthroat 64, Yellow-breasted Chat 6, Summer Tanager 12, Scarlet Tanager 11, Northern Cardinal 234 (217 regular, 6 stationary, 11 feeder), Rose-breasted Grosbeak 1, Blue Grosbeak 25 (24 regular, 1 feeder), Indigo Bunting 110, Eastern Towhee 79 (73 regular, 2 stationary, 4 feeder), Chipping Sparrow 59, Field Sparrow 24, Savannah Sparrow 1, Grasshopper Sparrow 14, Song Sparrow 77 (68 regular, 4 stationary, 5 feeder), White-throated Sparrow 5, Bobolink 71, Red-winged Blackbird 57, Eastern Meadowlark 39, Common Grackle 453 (441 regular, 6 stationary, 6 feeder), Brown-headed Cowbird 62 (55 regular, 7 feeder), Orchard Oriole 7, Baltimore Oriole 8 (7 regular, 1 feeder), American Goldfinch 107 (104 regular, 3 feeder), House Sparrow 45 (40 regular, 4 stationary, 1 feeder).

Total: 116 species, 5121 individuals (4915 regular, 2 night, 73 stationary, 131 feeder).

County Compiler: Dennis E. Burnette, 4209 Bramlet Place, Greensboro, NC 27407.

Participants: Carolyn Allen, Don Allen, Leslie Bird, Dennis Burnette, Lynn Burnette, Chris Carter, Sue Cole, Phil Crisp, Sharon Egan, Peggy Ferebee, Dolores Foutch, Wally Foutch, Larry Gasper, Herb Hendrickson, Mildred Kallenbach, Elizabeth Link, Julie Shelbourne, Laurie Sorrell, Tom Street, Henry Strickland, Weslyn Strickland, Emily Tyler, Judie Underkoffler.

Henderson County, NC. (Mountains)

8:30 AM to 4:30 PM. Weather: temperature 62° AM, 72° noon, 70° PM; wind west 5 mph AM, 5 mph noon, 5 mph PM; clouds 20% AM, 100% noon, 80% PM; precipitation: none AM, rain noon, none PM. Regular: 10 observers in 8 parties; regular hours foot 19:00; regular hours car 11:00; regular miles foot 12.5; regular miles car 82.5. No night (owling) parties. No stationary parties. No feeder watchers. County summary: 30 party hours; 95 party miles, 10 participants.

Great Blue Heron 1, Green Heron 4, Canada Goose 19, Wood Duck 14, Mallard 14, Black Vulture 5, Turkey Vulture 15, Sharp-shinned Hawk 1, Red-tailed Hawk 3, American Kestrel 2, Northern Bobwhite 1, Semipalmated Plover 1, Killdeer 14, Solitary Sandpiper 14, Spotted Sandpiper 3, Rock Dove 6, Mourning Dove 72, Common Barn Owl 1, Common Nighthawk 1, Chimney Swift 71, Ruby-throated Hummingbird 4, Belted Kingfisher 16, Red-headed Woodpecker 1, Red-bellied Woodpecker 15, Yellow-bellied Sapsucker 3, Downy Woodpecker 8, Hairy Woodpecker 2, Northern Flicker 8, Pileated Woodpecker 7, Eastern Wood-Pewee 6, Willow Flycatcher 3, Eastern Phoebe 3, Great Crested Flycatcher 3, Eastern Kingbird 6, Northern Rough-winged Swallow 10, Barn Swallow 34, Blue Jay 21, American Crow 74, Common Raven 2, Carolina Chickadee 32, Tufted Titmouse 36, White-breasted Nuthatch 5, Carolina Wren 34, House Wren 1, Winter Wren 1, Blue-gray Gnatcatcher 8, Eastern Bluebird 20, Veery 3, Wood Thrush 15, American Robin 96, Gray Catbird 22, Northern Mockingbird 19, Brown Thrasher 30, American Pipit 26, Cedar Waxwing 23, European Starling 127, White-eyed Vireo 8, Yellow-throated Vireo 1, Red-eyed Vireo 39, Northern Parula 7, Yellow Warbler 2, Chestnut-sided Warbler 9, Black-throated Blue Warbler 6, Yellow-rumped Warbler 4, Black-throated Green Warbler 4, Blackburnian

Warbler 2, Blackpoll Warbler 19, Black-and-white Warbler 12, American Redstart 26, Worm-eating Warbler 2, Swainson's Warbler 1, Ovenbird 10, Northern Waterthrush 13, Louisiana Waterthrush 3, Kentucky Warbler 2, Common Yellowthroat 28, Hooded Warbler 8, Canada Warbler 2, Yellow-breasted Chat 2, Scarlet Tanager 12, Northern Cardinal 85, Indigo Bunting 82, Eastern Towhee 87, Chipping Sparrow 2, Field Sparrow 3, Song Sparrow 107, Dark-eyed Junco 3, Bobolink 6, Red-winged Blackbird 36, Eastern Meadowlark 20, Common Grackle 76, Brown-headed Cowbird 12, Orchard Oriole 2, House Finch 26, American Goldfinch 28, House Sparrow 9.

Total: 96 species, 1792 individuals (1792 regular, 0 night, 0 stationary, 0 feeder).

County Compiler: Simon R. B. Thompson, 11 Thermal View Drive, Tryon, NC 28782.

Participants: Dee Boucher, Dennis Coskren, Larry Farer, Wayne Forsythe, Barbara Neal, Jim Neal, Simon Thompson, Anne Ulinski, Marilyn Westphal, Jennifer Wren (plus several additional people on a nature center field trip).

Jones County, NC. (Coastal Plain)

5 AM to 9 PM. Weather: temperature 76° AM, 92° noon, 96° PM, 80° dusk; wind 10 - 15SE AM, 20 - 25SE noon, 20 - 25SE PM; clouds 10% predawn, 20% dusk; precipitation none. Regular: 1 observer in 1 party; regular hours foot 6:00; regular hours car 1:00; regular miles foot 3; regular miles car 25. Night (Owling): 1 observer in 1 party; night hours 0:30; night miles 1. No stationary parties. No feeder watchers. County summary: 16 party hours; 28-30 party miles, 1 participant.

Pied-billed Grebe 2, Double-crested Cormorant 1, Least Bittern 1, Great Blue Heron 3, Great Egret 2, Little Blue Heron 2, Cattle Egret 5, Green Heron 15, Black-crowned Night-Heron 3, Yellow-crowned Night-Heron 3, Canada Goose 10, Wood Duck 16, Hooded Merganser 1, Black Vulture 2, Turkey Vulture 20, Osprey 1, Red-shouldered Hawk 6, Red-tailed Hawk 1, Wild Turkey 1, Northern Bobwhite 1, American Coot 1, Killdeer 8, Greater Yellowlegs 5, Spotted Sandpiper 3, Least Sandpiper 2, Laughing Gull 15, Ring-billed Gull 30, Rock Dove 3, Mourning Dove 20, Yellow-billed Cuckoo 1, Barred Owl 4, Whip-poor-will 3, Chimney Swift 5, Ruby-throated Hummingbird 2, Belted Kingfisher 2, Red-headed Woodpecker 2, Red-bellied Woodpecker 8, Downy Woodpecker 1, Northern Flicker 2, Pileated Woodpecker 2, Eastern

Wood-Pewee 2, Acadian Flycatcher 6, Eastern Phoebe 5, Great Crested Flycatcher 10, Eastern Kingbird 3, Horned Lark 2, Purple Martin 3, Northern Rough-winged Swallow 20, Barn Swallow 30, Blue Jay 2, American Crow 5, Fish Crow 3, Tufted Titmouse 3, Brown-headed Nuthatch 1, Carolina Wren 5, House Wren 1, Blue-gray Gnatcatcher 5, Eastern Bluebird 6, Wood Thrush 4, American Robin 2, Gray Catbird 6, Northern Mockingbird 1, Brown Thrasher 3, European Starling 5, White-eyed Vireo 6, Yellow-throated Vireo 1, Red-eyed Vireo 5, Northern Parula 3, Pine Warbler 3, Prairie Warbler 3, Prothonotary Warbler 20, Worm-eating Warbler 1, Ovenbird 3, Common Yellowthroat 4, Hooded Warbler 2, Yellow-breasted Chat 3, Summer Tanager 10, Northern Cardinal 4, Blue Grosbeak 12, Indigo Bunting 1, Eastern Towhee 4, Chipping Sparrow 10, Field Sparrow 8, Red-winged Blackbird 4, Eastern Meadowlark 1, Common Grackle 10, Brown-headed Cowbird 3, Orchard Oriole 3, Baltimore Oriole 1, American Goldfinch 10, House Sparrow 3.

Total: 91 species, 483 individuals (483 regular, 0 night, 0 stationary, 0 feeder).

County Compiler: C.E. Ballenger III, 1001 Otrento Rd., Trenton, NC 28585.
Participants: C.E. Ballenger III.

Moore County, NC. (Sandhills)

5:15 AM to 8:20 PM. Weather: temperature 66° predawn, 81° noon, 74° PM, 68° dusk; wind 10SW predawn, 10SW noon, 17SW PM, 10SW dusk; clouds none noon, 100% PM, 50% dusk; precipitation none AM, shower PM, none dusk. Regular: 11 observers in 9 parties; regular hours foot 17:00; regular hours car 34:00; regular miles foot 8.25; regular miles car 218. Night (owling): 2 observers in 1 party; night hours 1:15; night miles 10. Stationary: 8 observers in 7 parties; stationary hours 10:00. Feeder watchers: 14 observers watching 29 feeding stations; feeder watching hours 24:00. County summary: 86 party hours; 228 party miles, 21 participants.

Double-crested Cormorant 1, Great Blue Heron 2, Green Heron 2, Mute Swan 6, Canada Goose 32, Wood Duck 7, Mallard 31 (27 regular, 4 stationary), Hooded Merganser 1, Red-breasted Merganser 2, Black Vulture 3, Turkey Vulture 20, Bald Eagle 1 (immature), Cooper's Hawk 1, Red-shouldered Hawk 3, Broad-winged Hawk 1, Red-tailed Hawk 7, Northern Bobwhite 6, American Coot 1, Killdeer 19, Spotted Sandpiper 8, Least Sandpiper 15, Ring-billed Gull 3, Rock Dove 4, Mourning Dove 139 (115 regular, 24 feeder), Yellow-billed Cuckoo 7, Barred Owl 1 (night), Common Nighthawk 1, Chuck-Will's Widow

19 (18 regular, 1 stationary), Whip-poor-will 13, Chimney Swift 82, Ruby-throated Hummingbird 12 (6 regular, 6 feeder), Belted Kingfisher 3, Red-headed Woodpecker 7 (6 regular, 1 stationary), Red-bellied Woodpecker 33 (23 regular, 10 feeder), Downy Woodpecker 11 (9 regular, 2 feeder), Hairy Woodpecker 1, Red-cockaded Woodpecker 4 (2 regular, 2 stationary), Northern Flicker 11 (6 regular, 5 feeder), Pileated Woodpecker 10 (5 regular, 5 stationary), Eastern Wood-Pewee 22 (20 regular, 2 stationary), Acadian Flycatcher 16, Eastern Phoebe 8 (6 regular, 2 stationary), Great Crested Flycatcher 69 (65 regular, 4 stationary), Eastern Kingbird 33, Purple Martin 59, Northern Rough-winged Swallow 14, Barn Swallow 58, Blue Jay 75 (46 regular, 29 feeder), American Crow 94 (87 regular, 7 stationary), Fish Crow 18, Carolina Chickadee 51 (34 regular, 17 feeder), Tufted Titmouse 87 (61 regular, 26 feeder), White-breasted Nuthatch 10 (3 regular, 7 feeder), Brown-headed Nuthatch 23 (19 regular, 4 feeder), Carolina Wren 42 (33 regular, 9 feeder), House Wren 2, Blue-gray Gnatcatcher 38, Eastern Bluebird 92 (84 regular, 8 stationary), Veery 1, Wood Thrush 30 (25 regular, 5 stationary), American Robin 121 (97 regular, 24 stationary), Gray Catbird 44 (36 regular, 8 stationary), Northern Mockingbird 86 (79 regular, 7 stationary), Brown Thrasher 40 (24 regular, 16 stationary), Cedar Waxwing 75 (69 regular, 6 stationary), Loggerhead Shrike 7, European Starling 138 (135 regular, 3 stationary), White-eyed Vireo 12, Solitary Vireo 1, Yellow-throated Vireo 10, Red-eyed Vireo 21, Northern Parula 9, Magnolia Warbler 2, Yellow-rumped Warbler 1, Yellow-throated Warbler 15, Pine Warbler 10 (8 regular, 2 feeder), Prairie Warbler 4, Black-and-white Warbler 17, American Redstart 3, Prothonotary Warbler 12, Worm-eating Warbler 1, Ovenbird 16, Louisiana Waterthrush 3, Common Yellowthroat 19, Hooded Warbler 9, Yellow-breasted Chat 10, Summer Tanager 22, Scarlet Tanager 1, Northern Cardinal 92 (67 regular, 25 feeder), Blue Grosbeak 27, Indigo Bunting 20, Eastern Towhee 43 (34 regular, 9 feeder), Chipping Sparrow 56 (51 regular, 5 feeder), Field Sparrow 4, White-throated Sparrow 8, Bobolink 1 (stationary), Red-winged Blackbird 50 (46 regular, 4 stationary), Eastern Meadowlark 76 (52 regular, 24 stationary), Common Grackle 118 (103 regular, 15 stationary), Brown-headed Cowbird 39, Orchard Oriole 9, House Finch 35 (18 regular, 17 stationary), American Goldfinch 25 (24 regular, 1 feeder), House Sparrow 18 (stationary).

Total: 104 species, 2732 individuals (2333 regular, 1 night, 214 stationary, 184 feeder).

County Compiler: Elizabeth Watson, 104 Rob Roy Road, Southern Pines, NC 28387.

Participants: Crawford Caton, Hazel Caton, Chris Christiansen, June Christiansen, Dick Dole, Lois Dole, Barbara Gent, John Gent, Mac Goodwin, Pat Hoffman, Wayne Irwin, Bob Johnson, Marion Jones, Billy McKenzie, Winifred Monroe, Alan Schultz, Kay Stoffel, John Watson, Libba Watson, Alice Wood, Ted York.

Onslow County, NC. (Coast)

Midnight to 8 PM. Weather: temperature 65° predawn, 76° AM, 92° noon, 96° PM, 80° dusk; wind 5 - 10 mph dawn, 10 - 15SE AM, 20 - 25SE noon, 20 - 25SE gusts PM, 15 - 20SE dusk; clouds 10% dawn, clear PM, 20% dusk; precipitation none. Regular: 8 observers in 7 parties; regular hours foot 19:30; regular hours car 28:00; regular miles foot 19; regular miles car 448. Night (owling): 2 observers in 2 parties; night hours 3:00; night miles 3.5. No stationary parties. Feeder watchers: 2 observers watching 6 feeding stations; feeder watching hours 3:00. County summary: 54 party hours; 470.5 party miles, 8 participants.

Pied-billed Grebe 6, Northern Gannet 14, Brown Pelican 72, Great Cormorant 1, Double-crested Cormorant 70, Least Bittern 1, Great Blue Heron 4, Great Egret 31, Snowy Egret 5, Little Blue Heron 1, Tricolored Heron 2, Cattle Egret 20, Green Heron 8, Black-crowned Night-Heron 1, White Ibis 1, Snow Goose (white phase) 1, Canada Goose 8, Wood Duck 14, American Black Duck 13, Mallard 10, Blue-winged Teal 2, Red-breasted Merganser 1, Ruddy Duck 2, Black Vulture 4, Turkey Vulture 62, Osprey 16, Sharp-shinned Hawk 1, Cooper's Hawk 1, Red-shouldered Hawk 5, Broad-winged Hawk 1, Red-tailed Hawk 6, Northern Bobwhite 17, Clapper Rail 4, Sora 1, Common Moorhen 17, American Coot 1, Black-bellied Plover 4, Semi-palmated Plover 29, Killdeer 30, American Oystercatcher 5, Black-necked Stilt 2, Greater Yellowlegs 7, Lesser Yellowlegs 1, Solitary Sandpiper 1, Willet 36, Spotted Sandpiper 3, Whimbrel 2, Ruddy Turnstone 2, Red Knot 54, Sanderling 52, Semipalmated Sandpiper 26, Western Sandpiper 1, Least Sandpiper 2, Dunlin 1, Peep sp. 150, Short-billed Dowitcher 18, Dowitcher sp. 4, Laughing Gull 800, Bonaparte's Gull 4, Ring-billed Gull 41, Herring Gull 21, Caspian Tern 1, Royal Tern 165, Common Tern 26, Forster's Tern 38, Least Tern 39, Black Skimmer 11, Rock Dove 23, Mourning Dove 266 (252 regular, 14 feeder), Eurasian Collared Dove 2, Yellow-billed Cuckoo 10, Eastern Screech-Owl 2 (night), Barred Owl 3 (night), Common Nighthawk 1, Chuck-will's-widow 10

(night), Whip-poor-will 11 (night), Chimney Swift 78, Ruby-throated Hummingbird 8 (2 regular, 6 feeder), Belted Kingfisher 4, Red-headed Woodpecker 8, Red-bellied Woodpecker 20 (12 regular, 8 feeder), Downy Woodpecker 5 (4 regular, 1 feeder), Hairy Woodpecker 1, Red-cockaded Woodpecker 4, Northern Flicker 5, Pileated Woodpecker 3, Eastern Wood-Pewee 24, Acadian Flycatcher 36, Empidonax sp. 1, Great Crested Flycatcher 66, Eastern Kingbird 22, Horned Lark 1, Purple Martin 98, Northern Rough-winged Swallow 24, Barn Swallow 166, Blue Jay 48 (41 regular, 7 feeder), American Crow 88, Fish Crow 12, Carolina Chickadee 34 (26 regular, 8 feeder), Tufted Titmouse 26 (19 regular, 7 feeder), White-breasted Nuthatch 4 (1 regular, 4 feeder), Brown-headed Nuthatch 15 (12 regular, 3 feeder), Carolina Wren 28 (24 regular, 4 feeder), Marsh Wren 3, Blue-gray Gnatcatcher 39, Eastern Bluebird 77, Wood Thrush 14, American Robin 11, Gray Catbird 21, Northern Mockingbird 69, Brown Thrasher 11, European Starling 167, White-eyed Vireo 26, Yellow-throated Vireo 4, Red-eyed Vireo 42, Northern Parula 37, Yellow-throated Warbler 31, Pine Warbler 28, Prairie Warbler 48, Black-and-white Warbler 4, Prothonotary Warbler 29, Worm-eating Warbler 3, Swainson's Warbler 5, Ovenbird 17, Louisiana Waterthrush 6, Kentucky Warbler 1, Common Yellowthroat 58, Hooded Warbler 9, Yellow-breasted Chat 7, Summer Tanager 18, Scarlet Tanager 1, Northern Cardinal 81 (67 regular, 14 feeder), Blue Grosbeak 19 (17 regular, 2 feeder), Indigo Bunting 80 (76 regular, 4 feeder), Painted Bunting 20 (9 regular, 1 feeder), Eastern Towhee 51, Bachman's Sparrow 6, Chipping Sparrow 34 (32 regular, 2 feeder), Field Sparrow 20 (19 regular, 1 feeder), Seaside Sparrow 4, White-throated Sparrow 3, Red-winged Blackbird 56, Eastern Meadowlark 57, Boat-tailed Grackle 38, Common Grackle 66 (62 regular, 4 feeder), Brown-headed Cowbird 45 (39 regular, 6 feeder), Orchard Oriole 16 (13 regular, 3 feeder), House Finch 16 (2 regular, 14 feeder), American Goldfinch 2 (feeder), House Sparrow 63 (59 regular, 4 feeder).

Total: 149 species, 4618 individuals (4474 regular, 26 night, 0 stationary, 118 feeder).

County Compiler: Nell Moore, 378 Francktown Rd., Richlands, NC 28574.
Participants: Sue Daniels, Buddy Garrett, Gilbert S. Grant, Hazel Green, John Hammond, Jimi Moore, Nell Moore, Jim O'Donnell, Sr.

Orange County, NC. (Piedmont)

5:30 AM to 6 PM. Weather: temperature 65° AM, 85° PM; wind 5 mph AM, 10 - 20 PM; clouds 50% AM, 75% PM; precipitation: scattered showers AM, thunderstorm PM. Regular: 28 observers in 10 parties; regular hours foot 44:15; regular hours car 18:30; regular miles foot 27.5; regular miles car 119. Night (owling): 7 observers in 2 parties; night hours 1:00, night miles 2. No stationary parties. Feeder watchers: 1 observer watching 1 feeding station; feeder watching hours 9:30. County summary: 73:15 party hours; 148.5 party miles, 29 participants.

Double-crested Cormorant 1, Green Heron 8, Canada Goose 118, Wood Duck 15, Mallard 14, Black Vulture 5, Turkey Vulture 36, Osprey 1, Northern Harrier 1, Sharp-shinned Hawk 3, Cooper's Hawk 1, Red-shouldered Hawk 5, Broad-winged Hawk 1, Red-tailed Hawk 15, Northern Bobwhite 1, Killdeer 13, Solitary Sandpiper 1, Spotted Sandpiper 3, Least Sandpiper 7, Rock Dove 34, Mourning Dove 136 (135 regular, 1 feeder), Yellow-billed Cuckoo 2, Barred Owl 1 (night), Chimney Swift 100, Ruby-throated Hummingbird 15, Belted Kingfisher 4, Red-headed Woodpecker 8, Red-bellied Woodpecker 77 (76 regular, 1 feeder), Downy Woodpecker 17, Hairy Woodpecker 2, Northern Flicker 13 (10 regular, 3 feeder), Pileated Woodpecker 4, Eastern Wood-Pewee 13, Acadian Flycatcher 20, Eastern Phoebe 5, Great Crested Flycatcher 12, Eastern Kingbird 15, Purple Martin 5, Northern Rough-winged Swallow 21, Barn Swallow 45, Blue Jay 72 (71 regular, 1 feeder), American Crow 107 (106 regular, 1 feeder), Fish Crow 4, Carolina Chickadee 74 (72 regular, 2 feeder), Tufted Titmouse 91 (90 regular, 1 feeder), White-breasted Nuthatch 3, Brown-headed Nuthatch 7, Carolina Wren 87 (86 regular, 1 feeder), House Wren 2, Blue-gray Gnatcatcher 77, Eastern Bluebird 99, Swainson's Thrush 7, Wood Thrush 29 (28 regular, 1 feeder), American Robin 132 (131 regular, 1 feeder), Gray Catbird 41 (40 regular, 1 feeder), Northern Mockingbird 100, Brown Thrasher 31, Cedar Waxwing 27, European Starling 148, White-eyed Vireo 22, Solitary Vireo 1, Yellow-throated Vireo 4, Red-eyed Vireo 81, Northern Parula 13, Yellow Warbler 7, Magnolia Warbler 2, Black-throated Blue Warbler 4, Yellow-rumped Warbler 6, Yellow-throated Warbler 5, Pine Warbler 18, Prairie Warbler 1, Blackpoll Warbler 1, Black-and-white Warbler 1, American Redstart 17, Prothonotary Warbler 2, Ovenbird 20, Louisiana Waterthrush 7, Kentucky Warbler 4, Common Yellowthroat 41, Hooded Warbler 7, Yellow-breasted Chat 14, Summer Tanager 19, Scarlet Tanager 7, Northern Cardinal 289 (279 regular, 10 feeder), Rose-breasted Grosbeak 2, Blue Grosbeak 25, Indigo Bunting 80, Eastern Towhee 62 (57 regular, 5

feeder), Chipping Sparrow 51, Field Sparrow 18, Grasshopper Sparrow 2, White-throated Sparrow 2, Bobolink 55, Red-winged Blackbird 54, Eastern Meadowlark 11, Common Grackle 161 (155 regular, 6 feeder), Brown-headed Cowbird 55, Orchard Oriole 4, House Finch 63 (62 regular, 1 feeder), American Goldfinch 96, House Sparrow 12.

Total: 101 species, 3282 individuals (3245 regular, 1 night, 0 stationary, 36 feeder).

County Compiler: Will Cook, 418 Sharon Rd., Chapel Hill, NC, 27514.

Participants: Bryan Bomberg, Audrey Booth, Norm Budnitz, Nancy Buehler, Janet Campbell, Jacqueline Dale, Edward Fiess, Perry Haaland, Lois Harris, Pat Hobson, Pete Hobson, Fran Hommersand, Alan Johnston, Steve Kahler, Jim Keighton, Nina Ligh, Ken Lundstrom, John March, Irmgard Muller, Lyn Ogburn, Joanna Perkinson, Jeff Phippen, Kevin Powell, Jay Rabb, Joy Rabb, Harriet Sato, Julia Shields, Pamela Timmons, Eleanor Wagstaff.

Pitt County, NC. (Coastal Plain)

7 AM to 5 PM. Weather: temperature 68° dawn, 70° AM, 78° noon, 80° PM 76° dusk, 72° post-dusk; wind calm dawn, nw through PM, calm dusk; clouds none all day; precipitation none. Regular: 4 observers in 2 parties; regular hours foot 8:00; regular hours car 3:00; regular miles foot 6; regular miles car 80. No night (owling) parties. No stationary parties. No feeder watchers. County summary: 11 party hours; 86 party miles, 4 participants.

Double-crested Cormorant 3, Great Blue Heron 1, Great Egret 1, Green Heron 3, Canada Goose 16, Wood Duck 8, Mallard 2, Gadwall 1, Black Vulture 1, Turkey Vulture 1, Osprey 1, Red-shouldered Hawk 1, Broad-winged Hawk 1, Red-tailed Hawk 3, American Kestrel 2, Northern Bobwhite 2, Killdeer 3, Solitary Sandpiper 1, Spotted Sandpiper 1, Least Sandpiper 1, Rock Dove 4, Mourning Dove 3, Yellow-billed Cuckoo 1, Eastern Screech-Owl 1, Great Horned Owl 1, Common Nighthawk 1, Whip-poor-will 1, Chimney Swift 1, Ruby-throated Hummingbird 1, Belted Kingfisher 1, Red-bellied Woodpecker 5, Downy Woodpecker 2, Northern Flicker 1, Pileated Woodpecker 3, Eastern Wood-Pewee 2, Acadian Flycatcher 1, Eastern Phoebe 1, Great Crested Flycatcher 2, Eastern Kingbird 3, Horned Lark 1, Purple Martin 1, Northern Rough-winged Swallow 3, Barn Swallow 1, Blue Jay 1, American Crow 7, Fish Crow 2, Carolina Chickadee 2, Tufted Titmouse 2, White-breasted Nuthatch 1, Brown-headed Nuthatch 1, Carolina Wren 2, Blue-gray

Gnatcatcher 2, Eastern Bluebird 2, Veery 1, Swainson's Thrush 1, Wood Thrush 1, American Robin 4, Gray Catbird 8, Northern Mockingbird 3, Brown Thrasher 2, Cedar Waxwing 2, Loggerhead Shrike 2, European Starling 5, White-eyed Vireo 2, Yellow-throated Vireo 1, Red-eyed Vireo 1, Northern Parula 1, Yellow Warbler 3, Black-throated Blue Warbler 1, Yellow-rumped Warbler 3, Pine Warbler 1, Prairie Warbler 1, Blackpoll Warbler 3, Prothonotary Warbler 9, Worm-eating Warbler 1, Swainson's Warbler 1, Ovenbird 1, Louisiana Waterthrush 1, Kentucky Warbler 1, Common Yellowthroat 3, Hooded Warbler 1, Wilson's Warbler 1, Yellow-breasted Chat 1, Summer Tanager 2, Northern Cardinal 4, Blue Grosbeak 3, Indigo Bunting 11, Eastern Towhee 1, Chipping Sparrow 2, Field Sparrow 2, Grasshopper Sparrow 1, White-throated Sparrow 1, Red-winged Blackbird 10, Eastern Meadowlark 1, Common Grackle 14, Brown-headed Cowbird 3, Orchard Oriole 3, House Finch 3, American Goldfinch 1, House Sparrow 1.

Total: 100 species, 247 individuals (247 regular, 0 night, 0 stationary, 0 feeder).

County Compiler: Veronica Pantelidis, 106 Lakeview Dr., Greenville, NC 27858.

Participants: Ernie Marshall, Veronica Pantelidis, Patricia Tyndall, Russ Tyndall.

Randolph County, NC. (Piedmont)

5:30 AM to 8 PM. Weather: temperature 68° dawn, 72° AM, 80° noon, 82° PM, 74° dusk; wind 3W dawn, 5W AM, 10W noon, 15W PM, 10W dusk; clouds 40% dawn, 50% AM, 60% noon, haze PM, 80% dusk; precipitation: none through noon, hail storm PM, none dusk. Regular: 6 observers in 3 parties; regular hours foot 4:00; regular hours car 15:00; regular miles foot 6; regular miles car 115.4. No night (owling). No stationary parties. No feeder watchers. County summary: 19:00 party hours; 121.4 party miles, 6 participants.

Canada Goose 72, Black Vulture 1, Turkey Vulture 12, Red-shouldered Hawk 1, Broad-winged Hawk 2, Red-tailed Hawk 2, Northern Bobwhite 4, Killdeer 9, Solitary Sandpiper 1, Spotted Sandpiper 1, Rock Dove 18, Mourning Dove 58, Yellow-billed Cuckoo 1, Chuck-will's-widow 2, Chimney Swift 22, Ruby-throated Hummingbird 1, Red-bellied Woodpecker 10, Downy Woodpecker 6, Eastern Wood-Pewee 3, Acadian Flycatcher 2, Eastern Phoebe

2, Eastern Kingbird 4, Purple Martin 4, Northern Rough-winged Swallow 3, Barn Swallow 12, Blue Jay 9, American Crow 21, Carolina Chickadee 11, Tufted Titmouse 11, Carolina Wren 9, Blue-gray Gnatcatcher 4, Eastern Bluebird 47, Wood Thrush 17, American Robin 87, Gray Catbird 3, Northern Mockingbird 37, Brown Thrasher 6, European Starling 50, White-eyed Vireo 3, Red-eyed Vireo 23, Yellow Warbler 2, Yellow-rumped Warbler 15, Pine Warbler 8, Prairie Warbler 4, American Redstart 3, Prothonotary Warbler 9, Ovenbird 1, Louisiana Waterthrush 1, Common Yellowthroat 4, Yellow-breasted Chat 4, Summer Tanager 3, Scarlet Tanager 1, Northern Cardinal 25, Blue Grosbeak 9, Indigo Bunting 26, Eastern Towhee 10, Chipping Sparrow 6, Field Sparrow 7, Grasshopper Sparrow 4, Song Sparrow 7, Red-winged Blackbird 35, Eastern Meadowlark 17, Common Grackle 53, Brown-headed Cowbird 10, Baltimore Oriole 1, House Finch 22, American Goldfinch 23, House Sparrow 11.

Total: 66 species, 868 individuals (868 regular, 0 night, 0 stationary, 0 feeder).

County Compiler: John Schoonover, 104 Armstrong Lane, Archdale, NC, 27263.

Participants: Dennis Burnette, Clarence Mattocks, James Mattocks, Evelyn Schoonover, John Schoonover.

Transylvania County, NC. (Mountains)

6:30 AM to 5 PM. Weather: temperature 50° - 70°; wind not reported; partly cloudy; thunderstorm at noon. Regular: 38 observers in 17 parties; regular hours foot 73:00; regular hours car 46:00; regular miles foot 51; regular miles car 374. No night (owling) parties. No stationary parties. Feeder watchers: 5 feeder watchers observing 5 feeding stations; feeder watching hours 21:00. County summary: 140 party hours; 425 party miles; 40 participants.

Pied-billed Grebe 2, Great Blue Heron 3, Green Heron 1, Canada Goose 48, Wood Duck 6, Mallard 43, Black Vulture 3, Turkey Vulture 51, Cooper's Hawk 2, Broad-winged Hawk 6, Red-tailed Hawk 3, American Kestrel 3, Peregrine Falcon 1, Ruffed Grouse 1, Northern Bobwhite 6, Killdeer 6, Solitary Sandpiper 3, Spotted Sandpiper 14, Ring-billed Gull 5, Rock Dove 6, Mourning Dove 206 (194 regular, 12 feeder), Black-billed Cuckoo 1, Yellow-billed Cuckoo 5, Eastern Screech-Owl 7, Great Horned Owl 2, Whip-poor-will 5, Chimney Swift 83, Ruby-throated Hummingbird 41 (26 regular, 15 feeder), Belted Kingfisher 6, Red-bellied Woodpecker 17 (16

regular, 1 feeder), Downy Woodpecker 16 (8 regular, 8 feeder), Hairy Woodpecker 5 (2 regular, 3 feeder), Northern Flicker 21 (20 regular, 1 Feeder), Pileated Woodpecker 33 (22 regular, 11 feeder), Olive-sided Flycatcher 1, Eastern Wood-Pewee 10, Acadian Flycatcher 26, Willow Flycatcher 12, Eastern Phoebe 74, Great Crested Flycatcher 14, Eastern Kingbird 7, Tree Swallow 7, Northern Rough-winged Swallow 54, Barn Swallow 275, Blue Jay 141 (124 regular, 17 feeder), American Crow 536 (488 regular, 48 Feeder), Common Raven 1, Carolina Chickadee 124 (101 regular, 23 feeder), Tufted Titmouse 187 (162 regular, 25 feeder), White-breasted Nuthatch 31 (20 regular, 11 feeder), Carolina Wren 100 (92 regular, 8 Feeder), House Wren 10, Winter Wren 3, Golden-crowned Kinglet 3, Ruby-crowned Kinglet 1, Blue-gray Gnatcatcher 18, Eastern Bluebird 113 (102 regular, 11 feeder), Wood Thrush 58, American Robin 454 (434 regular, 20 feeder), Gray Catbird 54 (52 regular, 2 feeder), Northern Mockingbird 34, Brown Thrasher 52 (46 regular, 6 feeder), Cedar Waxwing 8, European Starling 284 (275 regular, 9 feeder), White-eyed Vireo 10, Solitary Vireo 37, Yellow-throated Vireo 1, Red-eyed Vireo 90, Northern Parula 86 (85 regular, 1 feeder), Yellow Warbler 9, Chestnut-sided Warbler 44, Magnolia Warbler 1, Cape May Warbler 2, Black-throated Blue Warbler 35 (34 regular, 1 feeder), Yellow-rumped Warbler 6, Black-throated Green Warbler 15, Blackburnian Warbler 2, Yellow-throated Warbler 11 (9 regular, 2 feeder), Pine Warbler 6, Blackpoll Warbler 1, Black-and-white Warbler 35, American Redstart 8, Worm-eating Warbler 4, Swainson's Warbler 4, Ovenbird 72, Louisiana Waterthrush 11, Kentucky Warbler 1, Common Yellowthroat 60, Hooded Warbler 74, Canada Warbler 6, Yellow-breasted Chat 6, Scarlet Tanager 21, Northern Cardinal 255 (232 regular, 23 feeder), Rose-breasted Grosbeak 23 (15 regular, 8 feeder), Blue Grosbeak 1, Indigo Bunting 85 (82 regular, 3 feeder), Eastern Towhee 223 (201 regular, 22 feeder), Chipping Sparrow 71 (62 regular, 9 feeder), Field Sparrow 16, Song Sparrow 361 (350 regular, 11 feeder), Dark-eyed Junco 16, Bobolink 8, Red-winged Blackbird 141, Eastern Meadowlark 36, Common Grackle 229, Brown-headed Cowbird 25 (24 regular, 1 feeder), Orchard Oriole 2, Purple Finch 4, House Finch 92 (80 regular, 12 feeder), Pine Siskin 4 (feeder), American Goldfinch 160 (137 regular, 23 feeder), Evening Grosbeak 4, House Sparrow 16.

Total: 114 species; 5784 individuals (5429 regular, 0 night, 0 stationary, 355 feeder).

County Compiler: Norma Siebenheller, 187 Glen Cannon Dr., Pisgah Forest, NC 28768.

Participants: Elaine Badger, Dick Blee, Sylvia Blee, Patrick Bohan, Jack Bronson, Midge Bronson, Margery Eaton, Bill Edmonds, Peggy Franklin, Jeanne Grimmenga, Ed Hathaway, Dorothy Hollis, Bill Hough, Jean Hough, Jack Hudson, John Huggins, Rebekah Huggins, Betty Jones, Morgan Jones, Tom Joyce, Dick Larson, Mary Ellen Lindley, Carolyn Mills, Rick Mills, Susan Mitchell, Erika Parmi, Beth Rogers, Speed Rogers, Harry Sherwood, Mary Sherwood, Bill Siebenheller, Norma Siebenheller, Virginia Tener, Dade Thornton, Mary Ann Thornton, Richard Thorsell, Connie Updike, George Updike, Ellen Weigley, Ira Weigley.

Reference

NAMC Newsletter #2, January, 1994.

Editor's Note: You can use lists and comments like these to help plan your late spring birding in North Carolina. Check out the Guilford County list, for example. Shorebirds, gulls, terns, warblers, and orioles, all near Greensboro. Contact the compiler of the count that interests you for a list of the good spots. Or, better yet, see how you can help the count this year. BW.

CBC Rare Bird Alert
(704) 332-BIRD

1996 Report of the South Carolina Bird Records Committee

Peter L. Worthington, Chairman

Robin Carter

Dennis Forsythe

Lex Glover

Christopher Marsh

Will Post

Simon R. B. Thompson

The South Carolina Bird Records Committee (SCBRC) acted on 24 reports in 1996. One other report (that of Alder Flycatcher) remains pending. Of the 24 birds submitted for review, 5 were rejected and 19 accepted. The accepted reports led to the addition of 8 species to the South Carolina list. American Ornithologists' Union splits added 3 more.

Accepted

NORTHERN FULMAR - A light phase bird was seen inshore at Huntington Beach SP (HBSP) by Jack Peachey and Bob Maxwell on 22 November 1995 and is the first accepted SC record. Added to the Provisional I (PI) list.

WHITE-TAILED TROPICBIRD - A bird was seen and well described by Jack Peachey on 12 October 1996, about 50 miles out from Murrells Inlet.

RED-BILLED TROPICBIRD - A freshly dead bird was collected at Folly Beach, Charleston County, in September 1996. The specimen is now in the Charleston Museum. Added to the Definitive (Def) list.

ROSS'S GOOSE - A very obliging individual spent November 1995 to February 1996 at a horse farm in Laurens County. Seen and photographed by many. Added to the Def list.

NORTHERN GOSHAWK - One was carefully described by Robert Merrick and Rick Phillips at the Caesars Head SP hawk watch on 9 October 1995 for a first accepted state sighting. Added to the PI list.

LESSER BLACK-BACKED GULL - Jack Peachey and others found a winter adult at Harbor Island Beach on 21 September 1996. These birds are now considered regular, though uncommon, on the SC coast.

ROSEATE TERN - Seen by Jack Peachey at HBSP on 2 July 1995. Added to the PI list.

RUFF - A basic plumage bird was seen and carefully described by Steve Calver at the Savannah River Spoil Site on 10 November 1995.

MURRE, SP? - A murre was seen on 6 March 1996 by Bob Maxwell and Jack Peachey, off S Litchfield Beach. It may well have been a Common Murre, but the sea was too rough for a satisfactory determination. The sighting is accepted as to genus only.

WHITE-WINGED DOVE - Judy Halloran photographed one at her feeder on Harbor Island on 28 June 1996, for a first summer state record.

LONG-EARED OWL - Steve Patterson and others heard the bird calling on 21 December 1995 during a McCormick County Christmas Count. This is a very rare inland report and was accepted on the basis of vocalization only.

BLACK-CHINNED HUMMINGBIRD - An immature male spent the winter of 1995 - 96 at a feeder in Lexington County. Photos and videotapes by many, with the bird maturing sufficiently by March for a determination of the species. Added to the Def list.

VERMILLION FLYCATCHER - Bob Maxwell and Pete Worthington saw 2 birds on 6 October 1995 at Big Beaverdam Creek, Townville. One was a female, the other appeared to be an immature. This is the first report in several years.

EASTERN KINGBIRD - One seen at Hunting Island SP on 16 December 1995 by Thomas Nicolls provided a rare early winter report.

CAVE SWALLOW - Doug McNair found a moribund bird at the foot of the radar tower at the Coast Guard Station at Folly Beach in October 1994. The specimen is now at the Charleston Museum. Added to the Def list.

MOURNING WARBLER - Three separate birds were seen by Bob and Barbara Maxwell and Betty and Peter Worthington in the Upper Piedmont in September - October 1995. All sightings have been accepted, with some reservations by one or more committee members on each, since they are of rare but regular occurrence in the Piedmont. While sightings of rare passerines need to be carefully documented and reported to Ricky Davis for Briefs for the Files, they will not generally be reviewed by the SCBRC.

WHITE-WINGED CROSSBILL - South Carolina's first visited the feeder of Caroline Eastman and Robin Carter in Columbia on 3 April 1996. This was an immature bird and remained, on and off, all day for the many birders who rushed over. A videotape shows the crossed bill and white wing bars. Added to the Def list.

Rejected

CURLEW SANDPIPER - A 12 June 1996, sighting at HBSP was not accepted due to some inconsistent details.

LITTLE GULL - A report of a bird seen at the Savannah River Spoil Site was not accepted due to insufficient details.

ANNA'S HUMMINGBIRD - A bird that stayed at a Camden feeder from Thanksgiving to late December was at first believed to be this species. Photos reviewed by both Bob Sargent in Alabama and Nancy Newfield in Louisiana

ranged from a possible from Bob to an immature male Ruby-throat from Nancy. The SCBRC sided with caution and rejected the report.

CLAY-COLORED ROBIN - A report of this Mexican border bird in May 1995 was not accepted due to being so far out of range, and the species does not appear subject to vagrancy. Added to the hypothetical list.

BLACK-WHISKERED VIREO - A bird seen, but not heard, and very well documented, appeared to be of this species. But outside review by P. William Smith of Homestead, Florida, raised enough questions to cause it to be assigned to the hypothetical list.

Other Action

On 8 February 1997 the SCBRC downgraded Ash-throated Flycatcher to Hypothetical since several committee members doubted seriously whether the species should have been added originally. Further, Mute Swan (feral) is appearing with increasing frequency in South Carolina. Though the origin of some of the birds is suspect, others are probably truly feral, and the SCBRC voted to add the species to the Provisional I list.

Changes Caused by the AOU Split

The AOU splits caused the following changes to the SC list. All changes are to the definitive list, via specimens at the Charleston Museum, except for Bullock's Oriole (for which a photographic record exists). Bicknell's Thrush, Eastern Towhee, Salt-marsh Sharp-tailed Sparrow, Nelson's Sharp-tailed Sparrow, Baltimore Oriole, and Bullock's Oriole are added. Rufous-sided Towhee, Sharp-Tailed Sparrow and Northern Oriole are deleted. Note: There is no SC record for Spotted Towhee, the Western species which has occurred casually in most Eastern states. Keep your eyes open!

Conclusion

With all these changes, the SC list now stands at 412 species + 1 genus (Catharacta) and 1 SSP. Of these, 21 (and the SSP) are on the provisional list.

We wish to note with regret that John Cely and Sid Gauthreaux have stepped off the SCBRC after serving since its inception. They will be sorely missed but will still be two of our best resources for critical comment. We welcome the return of Will Post and Chris Marsh to fill the gap.

Please remember that this report does not meet the criteria of "publication", i.e. full documentation in a journal to establish a permanent record. To do this, the original submitter or a collaborator should submit a note for publication in *The Chat* through Dennis Forsythe, SC Field Notes Editor.

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Sanderlings Exploit Beached Animal Carcasses as a Source of Fly Larvae

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Several species of shorebirds are opportunistic feeders on dead fish and crustaceans (Bent 1927, 1929; Gochfeld and Burger 1980). Sharp-tailed Sandpipers (*Calidris acuminata*), Pacific Golden Plovers (*Pluvialis fulva*), and Ruddy Turnstones (*Arenaria interpres*) frequented the seal-killing fields in Alaska, feeding on flies, larvae (maggots), and other insects that associate with carrion (Bent 1927, Bent 1929, Gabrielson and Lincoln 1959). Bent (1927) also reported that Sanderlings (*Calidris alba*) catch flies and feed on fly larvae, but did not indicate whether these prey were associated with carrion. In this note I document several instances of Sanderlings feeding on and defending bird carcasses on North Topsail Beach, Onslow County, North Carolina.

Between 0914 and 0924 on 31 December 1991 I watched a Sanderling vigorously probing in the sand around a partially buried immature Laughing Gull (*Larus atricilla*). During this time it captured and swallowed 8 maggots. The Sanderling probed and ploughed through the sand to a depth of about 2-4 cm, on some occasions appearing to "bulldoze" sand with its forehead and bill as it probed. This Sanderling probed an irregular area of 0.22 m² around the exposed wing of the gull. Some prey were captured as much as 25 cm from the gull. This Sanderling then flew to the edge of the waves and probed and drank for several minutes. At 0939 it returned to the gull carcass and continued probing until 1006, at which point I left the area.

At 0936 on this date I watched another nearby Sanderling (Figure 1) feeding in the vicinity of a partially-buried decomposing immature Northern



Fig. 1. Sanderling feeding near gannet carcass

Gannet (*Morus bassanus*). From 0937 to 0943 this Sanderling captured and swallowed 21 maggots (3.5 larvae per minute). This bird stopped feeding for about 6 min. It began probing again at 0949 and captured another fly larva. At 0950 a Black-bellied Plover (*Pluvialis squatarola*) walked to within 1 m of the gannet carcass and the Sanderling. The Sanderling flexed its legs and sat down with its ventral plumage in contact with the sand. Shortly thereafter it ran at the plover and both flew off. The Sanderling returned at 1006 and resumed probing and feeding near the gannet carcass. This Sanderling probed most frequently from 0.1 to 0.6 m from the carcass, where maggots were readily encountered and captured. Surprisingly, the Sanderling spent relatively little time actually probing the carcass or the sand within a few centimeters of the carcass.

From 0905-0915 on 8 February 1992 I observed a Sanderling probing the sand around the carcass of a partially-buried Common Loon (*Gavia immer*). Some probe marks were up to 30 cm from the carcass (Figure 2). On 16 December 1994 I photographed probe-feeding marks similar to those of Sanderlings around the carcass of a Striped Burrfish (*Chilomycterus schoepfi*) and a Common Loon.

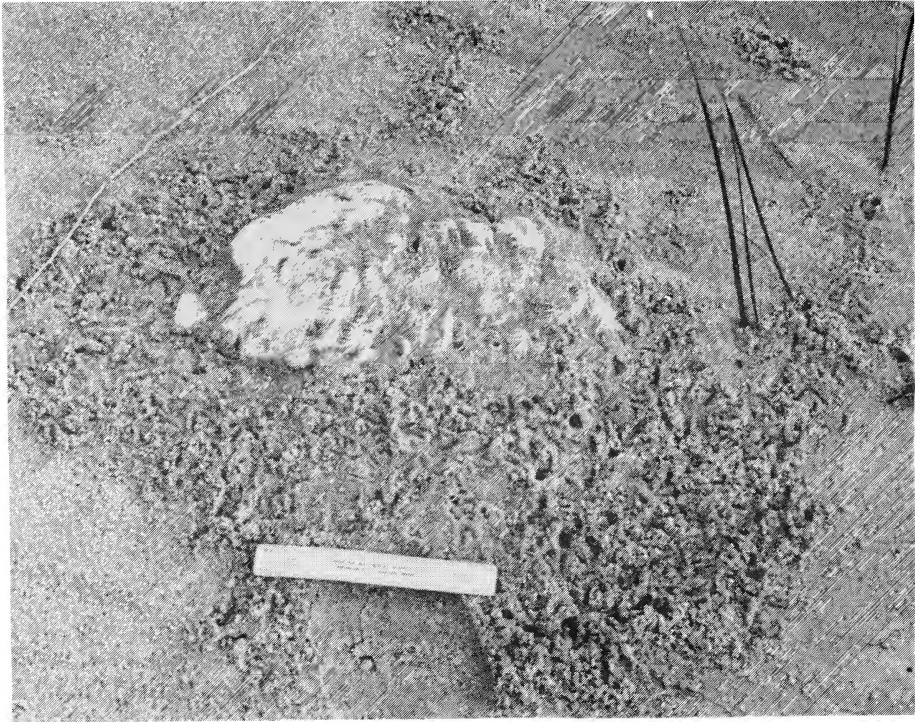


Fig. 2. Probe marks near loon carcass

I collected fly larvae from the vicinity of a Northern Gannet on 12 December 1994, a Common Loon on 16 December 1994, and another Common Loon on 25 January 1995. These were reared to adults and identified by David L. Stephan. A total of 98 flies of six species, representing two families (Muscidae, Calliphoridae) were identified (Table 1). Maggots generally were not visible on the exposed surface of the beached carcass, probably due to the harsh microclimate there (high salinity, cold temperatures, wind-blown sand). In milder microclimates, mature maggots frequently crawl away from the carrion on the surface of the soil. Mature larvae dispersed away from the decomposing carcass, perhaps to pupate in an area of lower humidity. Sanderlings exploited these larvae as they moved away from the carcass through the sand.

Table 1. Fly larvae identified from bird carcasses at North Topsail Beach, NC.

Species	Northern Gannet 12 Dec 94	Common Loon 16 Dec 94	Common Loon 25 Jan 95
<i>Calliphora vicina</i>	6	56	1
<i>Calliphora livida</i>		12	
<i>Cynomyopsis cadaverina</i>		2	
<i>Phaenicia</i> sp. (<i>cluvia</i> ?)		3	
<i>Phormia regina</i>	1		
<i>Hydrotaea</i> sp.			17

Acknowledgments

I thank David L. Stephan, Department of Entomology, N.C. State University, for the identification of the flies.

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Mate-reassessment in an Already-mated Female Northern Mockingbird

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Northern Mockingbirds (*Mimus polyglottos*) are considered to be monogamous. Long-term pair bonds lasting for 2-4 years are common, and pairs may remain together for as long as 8 years (Derrickson and Breitwisch 1992). However, as in many bird species, deviations from monogamy occur. Both males and females will take advantage of opportunities to attract additional mates (e.g. Derrickson 1989, Breitwisch, Ritter, and Zaias 1986, Fulk, Logan, and Hyatt 1987), divorce and mate switching have been observed (Logan 1991), and extra-pair fertilizations are known to occur (DeLoach, personal communication). While such variations from the maintenance of strictly monogamous pair bonds are not unusual, the conditions under which they occur are not known. For example, divorce (e.g. Choudhury 1995) may follow nest failure or other decreases in the reproductive output of established pairs. I report here observations made on mate re-assessment in an already-mated female mockingbird. They indicate that in the absence of unusual circumstances such as nest failure, some socially monogamous female mockingbirds may re-assess their mating decisions at the beginning of a breeding season even after sharing a long term pair-bond for several years.

In late February through March 1996 in Guilford County, North Carolina, I observed active mate re-assessment in a female mockingbird. The female had been paired with her primary mate for two prior breeding seasons. As is common for mockingbirds in North Carolina, the pair also remained together in their shared territory outside the breeding season, in the fall and winter. In late winter 1996, I saw the female repeatedly flying back and forth between the territories of two neighboring males. One was her long term mate of two years, and the other was a neighboring unmated male, who to my knowledge had never reared young, and who had moved into the adjacent territory the previous autumn. All individuals were color-banded for identification, so the identities of the birds were clear.

During 30 minutes of observation on February 28, the female flew back and forth between the two males' territories at least six times. Mockingbird song is thought to be involved in mate attraction (Merriitt 1985) and in

stimulating breeding activities (Logan, Hyatt, and Gregorcyk 1990), and during this period both males sang loudly. Though the female spent time in both males' territories, she appeared to react differently to the two males. Her interactions with her primary mate were very aggressive: as she re-entered his territory, he repeatedly flew up to her and chased her. They frequently exchanged loud aggressive "hew" calls during the chases. Aggressive calling between paired birds is common in mockingbirds (Logan 1994), but the aggression expressed in these interactions was unusually intense. Because of the chases, the female was unable to perch undisturbed while she was in her primary mate's territory. In contrast, while she was perched in the new male's territory, many fewer aggressive calls occurred, and I never observed the male chase the female. Instead, the female perched quietly nearby, while he sang from a distance of 12-15 meters. Her primary mate appeared to be aggressively trying to force her to stay in his territory by chasing her away from the competitor's boundary. The new male, on the other hand, sang softly when she was nearby.

The primary male also pointedly flew into at least 5 prospective nest sites, displaying his white wing patches and singing as he did so, often while the female was perched near the boundary in the new male's territory. This behavior could have drawn the female's attention to the presence of valuable nesting resources in their territory. The second male also flew into prospective nest sites and sang from them as the female perched nearby.

For several weeks, the female continued to move back and forth between the two males' areas. Initially she used more space and spent more time in the area defended by her primary male — her familiar territory. For example, she flew back and forth five times during one 30-min observation period on the morning of 1 March. Though during that period she spent approximately equal amounts of time in each male's territory, that evening during the 30 minutes just prior to dusk she perched quietly with her primary male near the boundary of their territory most distant from the shared boundary with the competing male. She did not fly near the secondary male's boundary as night fell.

Interestingly, her interactions with her primary mate became less aggressive in successive days. Though aggressive calling continued to be common, I witnessed no additional aggressive chases after the first day. In addition, her use of the new male's territory gradually increased. When first seen in his territory, she remained near the boundary of her primary mate's territory, using only approximately one-fifth of the total area defended by the new male. After three weeks, she had been seen in all areas of his approximately 1.0 ha territory. This suggests that she was gradually evaluating the quality of the male's territory.

Both males continued to sing, and both continued to show the female nesting resources. Initially, the new male's nest displays were more intense. For example, in early March, after she followed the new male into a prospective nest site, he flew to the ground to gather twigs. As she watched from a perch approximately 8 m above him, he carried twigs back into the nest site they had just visited. Rather than using the twigs for building however, he dropped them and flew to perch near her. Carrying twigs appeared to be a display to retain her rather than an aborted attempt to build. However, by mid-March, both males had begun actual nest construction, and each had built a partially complete nest.

The female continued to move back and forth between the two territories as the males built, but neither nest had yet been lined. Nest-lining is an activity usually performed by females, and the absence of nest-lining behavior suggests that the female was assessing the males as they built, but not yet participating in the nesting process with either male. By late March she was sighted at the new male's nest, which by this time was fully lined, indicating that she had participated in nest construction with the new male. Her re-assessment continued until 31 March when she began to lay eggs in the nest constructed by her primary mate. She had spent approximately four weeks comparing the males and their territories, and despite her nesting activity in the other male's territory, she opted to remain with her long term mate.

I compared the female's nesting success with her primary mate during the 1995 breeding season to that of 12 other pairs in the same population. Numbers of nests in which eggs were laid ranged from 3-5 for the group. This female and her mate attempted five nests and successfully fledged young from two of the five. Their 40% success rate is comparable to an average of 51.1% for 12 other pairs in the population. The pair's success rate during the prior breeding season did not deviate greatly from the average for other pairs nesting in the same habitat. Indeed, several pairs that nested together in spring 1996 had a lower percentage of successful nests in 1995. This suggests that nest failure, a drop in reproductive success, or mate disappearance need play no role in the occurrence of mate re-assessment by female mockingbirds. Rather, this female's re-assessment seemed to be stimulated by the combination of a newly arrived male adjacent to her territory and the onset of a new breeding season.

I saw a similar pattern of comparison in a second female in late May 1996. Two days after nest loss in her mate's territory, she was seen both in his territory and a neighboring male's territory. Again, both males sang and began nest building, and after a few days of assessing the second male, the female opted to remain with her mate.

Clear instances of female choice in unmated female birds have now been documented in several species (e.g. Möller 1988). The observations described here indicate the importance of distinguishing between initial mate choice in female birds and mate-reassessment that occurs when females re-evaluate the quality of their mates after initial mate choice. The latter, as illustrated here, may continue in mockingbirds for at least two years following initial mate choice. It is impossible to determine from these observations how common reassessments may be. It is possible that they occur repeatedly in the same female, but go completely undetected, particularly if the female assesses other males using long distance signals (e.g. song) and/or chooses to remain with her first mate. Research on other birds indicates that monogamously paired females regularly assess the quality of their current mates (e.g. Soler *et al.* 1996, in monogamous female black wheatears). The observations reported here indicate that even when birds share a long term pair-bond, female mockingbirds may make comparisons between established mates and new competitors, in effect re-assessing their mate choice. Moreover, when the female opts to remain in the established pair, such comparisons need not result in divorce and the formation of new bonds.

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Southern Flying Squirrel Displaces a Red-cockaded Woodpecker from its Cavity

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The Red-cockaded Woodpecker (*Picoides borealis*), an endangered species, depends upon the cavities it excavates in living pines for nesting and roosting (Ligon 1970). Cavities, however, are often a limited resource (Ligon 1970). Factors limiting cavities include availability of suitable cavity trees, rate of cavity excavation, cavity enlargement, cavity tree loss, and use of cavities by other species (Conner *et al.* 1991, 1994; Hooper 1988, Loeb 1993).

Many vertebrates use Red-cockaded Woodpecker cavities, including Southern Flying Squirrels (*Glaucomys volans*), Red-bellied Woodpeckers (*Melanerpes carolinus*), Tufted Titmice (*Parus bicolor*), Great Crested Flycatchers (*Myiarchus crinitus*), Eastern Bluebirds (*Sialia sialis*), and black rat snakes (*Elaphe obsoleta*) (Dennis 1971, Harlow and Lennartz 1983, Jackson 1978, Kappes 1993, Loeb 1993, Rudolph *et al.* 1990). Southern Flying Squirrels and Red-bellied Woodpeckers are two of the most important cavity users. They are usually the most prevalent users of cavities (Kappes 1993, Loeb 1993, Rudolph *et al.* 1990), and removal of Southern Flying Squirrels from Red-cockaded Woodpecker clusters significantly increases Red-cockaded Woodpecker reproductive success (Laves 1996).

Although use of Red-cockaded Woodpecker cavities by Southern Flying Squirrels is well documented, to our knowledge direct interactions between Red-cockaded Woodpeckers and Southern Flying Squirrels have not been observed. Thus, it is not known whether Southern Flying Squirrels occupy cavities that Red-cockaded Woodpeckers have vacated or whether they can actually usurp cavities used by woodpeckers. We describe an incident in which a Southern Flying Squirrel displaced a Red-cockaded Woodpecker from its roosting cavity.

On 16 March 1994 we attempted to trap a Red-cockaded Woodpecker on the Savannah River Site, located in Aiken and Barnwell Counties, South Carolina. The bird was to be translocated to a new area and paired with a potential mate. Immediately after the bird entered its roost cavity at dusk, a funnel type trap made of a fine silk-mesh material attached to an adjustable pole was placed over the entrance. Techniques used to flush the Red-cockaded Woodpecker included slapping the base of the tree with our hands and sticks, shaking and scratching the net at the cavity entrance, yelling loudly, and kicking the base of the tree. Our experience had taught us that if the Red-cockaded Woodpecker does not exit after several flushing attempts, it will remain in the cavity. When initial attempts to flush the Red-cockaded Woodpecker into the trap failed, we decided to climb the tree and remove the bird.

To facilitate access to the cavity, we first removed a nest box, which had been placed on the roost tree approximately 1.5m above the ground. Upon doing so, two adult Southern Flying Squirrels ran from the box and up the tree in which the Red-cockaded Woodpecker was roosting. Further inspection indicated that a total of 5 Southern Flying Squirrels had been using the nest box. One of the escaped squirrels ran up the tree trunk opposite the cavity and was lost from sight in the canopy. The other squirrel ran directly up the tree,

passing between the funnel trap and the tree, and entered the cavity. Immediately thereafter, the Red-cockaded Woodpecker fled the cavity and was captured in the trap, although it subsequently escaped. The Southern Flying Squirrel remained in the cavity at least 40 minutes, at which time we ceased observation. No squirrels were present the following day when the cavity was inspected. That evening (17 March 1994) the Red-cockaded Woodpecker returned and roosted in the cavity (J. Edwards pers. comm.).

This is the first published observation of a Southern Flying Squirrel displacing a Red-cockaded Woodpecker from its cavity. Although the circumstances surrounding this observation were unusual and the result of human disturbance, this observation demonstrates that Southern Flying Squirrels can displace Red-cockaded Woodpeckers from their cavities. While the Red-cockaded Woodpecker was only forced to roost outside its cavity for a maximum of one night, disturbances such as these over a period of time may lead to decreased Red-cockaded Woodpecker survival by increasing energy costs and risk of predation.

Nest boxes may be an effective method of reducing use of Red-cockaded Woodpecker cavities by Southern Flying Squirrels and other species (Jackson 1978, Loeb and Hooper in press). However, the observation reported here suggests that nest boxes should not be placed directly on the Red-cockaded cavity trees and might be better if placed on other trees nearby. Further, it may be necessary to remove any Flying Squirrels occupying other cavities in the tree before management activities such as banding, checking nest cavities, or translocations are undertaken.

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Eastern Meadowlark Carries Chick

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At approximately 0900 h on 21 June 1991, I observed an adult Eastern Meadowlark (*Sturnella magna*) carrying a chick in its bill. I made this observation while working on a breeding bird atlas block approximately 4 km NE of Lancaster, Lancaster County, South Carolina.

The adult was first seen leaving a fallow field carrying something in its bill. As the bird crossed the road about 6 m in front and 2 m off the ground from where I stood, I could see it was holding a young meadowlark. The young bird appeared to be half grown. Its eyes were opened, and it had begun feathering out. I especially noticed the yellow breast feathers. The young bird did not appear to be stressed, as I observed no struggling and heard no vocalizations. The adult carried the young about 70 m into another field of similar habitat.

This behavior could have been caused by the fact that the field the meadowlark was leaving was being plowed at the time. The tractor was about 50-70 m from where I first saw the bird fly. I viewed the bird under excellent conditions with 7.5 x 42 Swift binoculars.

Many species of birds have been documented carrying their young to protect them against threats to their safety. Waterfowl, gallinules, harriers, and chickadees have been reported holding their young with their bill in flight (Terres 1980, Welty and Baptista 1988).

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Hooded Mergansers Breeding in the Upper Coastal Plain of South Carolina

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Densities of breeding Hooded Mergansers (*Lophodytes cucullatus*) in the southeastern United States are generally considered low (Bellrose 1980), and there is only limited information on their breeding biology (Morse *et al.* 1969, Kennamer *et al.* 1988). In South Carolina, for example, there are only a few reports of isolated breeding (Post and Gauthreaux 1989, McNair and Post 1993). Kennamer *et al.* (1988) reported that from 1982 through 1988, Hooded Merganser use of > 100 Wood Duck (*Aix sponsa*) nest boxes on the U.S. Department of Energy's Savannah River Site (SRS) in Aiken and Barnwell Counties, South Carolina, averaged less than one percent annually. In this account, I present additional data on breeding Hooded Mergansers at this same location from 1989 through 1996. Study areas on the SRS and methods used during this study were the same as those previously described in Kennamer *et al.* (1988).

Results and Discussion

From 1982 through 1988, Kennamer *et al.* (1988) reported only 5 total Hooded Merganser nests, with a pair nesting about every other year and nest box use averaging 0.6% annually. From 1989 through 1996, however, nest box use by Hooded Mergansers more than tripled to 2.2% annually, with an average of 3 nesting attempts by Hooded Mergansers each year. I also observed an increase in the incidence of Hooded Merganser parasitism of Wood Duck nests in recent years, with 17 Wood Duck nests containing Hooded Merganser eggs over the period 1989-1996. In the 7 years prior to that period, only 3 Wood Duck nests were noted to contain Hooded Merganser eggs. My results indicate a growing breeding population of Hooded Mergansers on the SRS, although growth has been at a relatively slow pace. Hooded Mergansers do not attain sexual maturity until their second year of life (Bellrose 1980), and this may explain, at least in part, the slow growth I observed over 15 years in the SRS breeding population. I am unaware of the extent to which other local

breeding populations of Hooded Mergansers in South Carolina may also be growing.

Initiation dates of Hooded Merganser nests ($n = 25$, 1982-1996) on the SRS ranged from January 18 to March 22 and averaged February 23 (± 3 Standard Error [SE] days). The latest initiation date of a successful nest was March 10. Phillips (1926) indicated that Hooded Mergansers in the Southeast had an early breeding season, and data from the SRS confirms that to be the case. Although Hooded Mergansers begin nesting relatively early in the year, the range of nest initiation dates for this species contrasts with that for Wood Ducks nesting on the SRS, which lasts from mid-January to late-June (Kenamer and Hepp 1987). It is not clear why Hooded Mergansers would have such a short breeding season, but differences in the diets of these species (see Bellrose 1980) and temporal changes in food abundance may play a significant role.

Clutch sizes of 21 completed Hooded Merganser nests on the SRS averaged 11 eggs (range: 8 - 19). The single clutch of 19 eggs that I observed was likely the result of conspecific nest parasitism (the next largest clutch size was 13). Interestingly, 17 of those 19 eggs hatched, for a hatching rate of 89%. For all successful nests ($n = 16$), brood size at hatching averaged 10 young, and the average hatching rate was 86%. Causes of nest failure included predation by ratsnakes (*Elaphe obsoleta*, $n = 2$), raccoon (*Procyon lotor*, $n = 1$), and Red-headed Woodpecker (*Melanerpes erythrocephalus*, $n = 1$), and nest abandonments before ($n = 4$) and after ($n = 1$) incubation began. Egg measurements were recorded for 163 eggs from 15 nests. Egg length averaged 54.1 ± 0.11 SE mm (range: 50.0 - 58.0 mm), while egg breadth averaged 44.3 ± 0.07 SE mm (range: 40.7 - 46.5 mm). In contrast, Wood Duck eggs are somewhat shorter (51.1 mm), but are particularly smaller in breadth (38.8 mm, Bellrose 1980).

I attempted to capture all nesting females to measure body weight ($+ 5$ g) during incubation with a pesola spring scale. Incubation generally lasts for 33 days in Hooded Merganser nests (Morse *et al.* 1969). Early incubation (mean = day 6) female body weights from 10 nests averaged 571 ± 10 SE g. Late incubation (mean = day 29) body weight averaged 518 ± 13 SE g ($n = 8$). For 6 nests, early and late incubation female body weights were recorded. Weight loss in those averaged 59 ± 12 SE g, indicating about a 10% decrease in weight over the course of incubation. Compared to other species of North American waterfowl, Hooded Mergansers apparently lose relatively little body weight during incubation (see review by Gatti 1983).

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Rocky Mount, NC 27804

(All dates summer 1996)

BLACK-CAPPED PETREL: This species was found off North Carolina in better than average numbers this summer. The best total was 363 out of Hatteras July 28 (Brian Patteson *et al.*). Also one was unusual (normally a deep-water species) in that it was found over water only 90' deep, south of Hatteras Inlet June 26 (Patteson).

CAPE VERDE (FEAE'S) PETREL: This species seems to be annual in occurrence off North Carolina now. This summer's sighting was of one off Hatteras July 20 (Patteson *et al.*).

SOOTY SHEARWATER: Three were found dead on the beach at N. Topsail Beach, NC, during the period June 16 - 21 (Gil Grant). One wonders if there was some kind of die-off at that time.

MANX SHEARWATER: A migrant was seen from shore at Cape Hatteras, NC, June 8 (Allen Bryan, *fide* John Fussell). Also a late migrant was seen out of Hatteras June 19 (Patteson).

WILSON'S STORM-PETREL: In North Carolina unusual occurrences of this species included one photographed on the beach at Ft. Macon June 4 (Bob Machover *et al.*); and inland birds brought in by Hurricane Bertha on July 13 with four at Goldsboro (Eric Dean) and one at L. Pinehurst (Dick Burk).

BAND-RUMPED STORM-PETREL: The peak count this summer was 30 off Hatteras July 28 (Patteson *et al.*).

LEACH'S STORM-PETREL: A good count of 12 was had out of Hatteras July 28 (Patteson *et al.*).

WHITE-TAILED TROPICBIRD: This species was found twice off North Carolina this summer (somewhat less than the last couple of years). Single adults were off Oregon Inlet June 1 (Armas Hill *et al.*) and Hatteras June 5 (Patteson).

MASKED BOOBY: The only report was of one off Hatteras June 5 (Patteson).

NORTHERN GANNET: One was out of season off of Hatteras July 27 (Patteson *et al.*).

DOUBLE-CRESTED CORMORANT: Some locally unusual summer sightings included one over Glen Cannon, Transylvania County, NC, July 3 (Tom Joyce), and two at L. Julian, Asheville, NC, July 17 (Simon Thompson).

ANHINGA: A count of 110 at the Savannah Spoil Site, Jasper County, SC, July 17 (Steve Calver) was impressive.

MAGNIFICENT FRIGATEBIRD: For the second year in a row, North Carolina had a good number of sightings of this species. One was over Cape Hatteras June 6 (Walt Walter, *fide* Marcia Lyons); one was north of Duck, Currituck County June 12 (Kerrie Kirkpatrick, *fide* Harry LeGrand); one was at Cape Hatteras again June 16 (Diane Andre); an impressive three were over Nags Head June 24 (Lee Yoder); and one was at Southport July 16 (Logan Williams, Dale Suiter, *fide* Harry LeGrand).

AMERICAN BITTERN: One was on the Bombing Range in mainland Dare County, NC, June 1 (John Fussell) for an interesting summer report.

REDDISH EGRET: In North Carolina three immatures were at the usual Sunset Beach area July 19 (Mary McDavit); a rarely seen dark-phase adult was at Hatteras Inlet July 20-21 (Mike O'Brien, Ned Brinkley, L. Zematis); and another immature was at the Cape Hatteras salt pond July 26 - early August (m. ob.).

CATTLE EGRET: An impressive count of 200+ was near Fayetteville, NC, July 5 (Hal Broadfoot, Jamie Stewart).

BLACK-CROWNED NIGHT-HERON: Two were in Hendersonville, NC, July 20-23 (Simon Thompson, Ira Weigley).

YELLOW-CROWNED NIGHT-HERON: The Winston-Salem, NC, colony had four nests this year, and each nest had 1-3 young successfully fledging (Ramona Snavelly). Also the Little Creek impoundment along NC 54 in Durham County, NC, had an immature July 7 (Will Cook) and an adult July 23 (Rob Gluck).

WHITE IBIS: The best records of inland wanderers included two in Mills River, Henderson County, NC, July 12 (Simon Thompson, Ira Weigley) and 18 south of Fayetteville, NC, July 5 (Hal Broadfoot, Jamie Stewart).

GLOSSY IBIS: Fifty at Huntington Beach State Park, SC, July 29 (Jack Peachey, Paul Rogers) was a good total for the area during the summer season.

ROSEATE SPOONBILL: South Carolina's second inland record involved one with Wood Storks near the Congaree Swamp National Monument, Richland County July 21-22 (Randy Dunlap, Bobby Desportes, Phyllis and Jim Beasley, Robin Carter, Caroline Eastman).

WOOD STORK: Some good totals of wandering storks included 238 at the Silver Bluff Audubon Sanctuary, Jackson, SC, July 7 (Dan Connely, *fide* Anne Waters), 60 near the Congaree Swamp National Monument, Richland County July 21-22 (Randy Dunlap *et al.*), and a peak of 70 at the usual Sunset Beach, NC, area this summer (*fide* Mary McDavit). Much less expected were the five

seen in flight over the waterway near N. Topsail Beach, NC, July 4 (Gil Grant).

GREEN-WINGED TEAL: Up to three (2 males, 1 female) spent the entire summer at a sand pit near Rocky Mount, Edgecombe County, NC (Ricky Davis), but no evidence of breeding was found.

NORTHERN SHOVELER: One was quite late at the Savannah Spoil Site, SC, June 15 (Steve Calver).

COMMON MERGANSER: A female-plumaged bird was again found in the Farrington area of Jordan Lake, NC, July 27 (Rob Gluck), possibly the same bird seen off and on in the area over the past couple of years.

RUDDY DUCK: Four summered on Harris Lake, Wake County, NC (Joanna Perkinson, *fide* Will Cook), providing a new location for summer sightings in the state.

OSPREY: Interesting summer records included one far to the west at Indian Lakes, Transylvania County, NC, June 8 (Marge Eaton, *fide* Norma Siebenheller); a nesting pair at L. Greenwood, SC, (Steve Wagner); a summering bird near Rocky Mount, NC (Ricky Davis); and two pairs all summer at Buckhorn Reservoir, Wilson County, NC (Davis).

SWALLOW-TAILED KITE: Sixteen at the usual spot in Santee Delta WMA, Georgetown County, SC, July 20 (Columbia Audubon Society) was an excellent total.

MISSISSIPPI KITE: Up to eight were in the Laurinburg, NC, area this summer (M. Wells, *fide* Hal Broadfoot) and young were seen to fledge from one nest again this year. Other good reports included one in Brunswick County, NC, June 30 (Mary McDavit); singles in Columbus County, NC, July 9 and 15 (Sam Cooper); one over Wilson Creek, New Bern, NC, June 27 (Rich Boyd); two over the Tar River Swamp, Greenville, NC, June 14 (John Wright); and an impressive 100+ circling over a field near Jackson, SC, June 3 (Dan Connely, *fide* Anne Waters).

BALD EAGLE: An excellent total of 10 eagles was seen near Pactolus, Pitt County, NC, June 8 (John and Paula Wright).

SHARP-SHINNED HAWK: Rare summer sightings included one west of Asheville, NC, July 11 (Esther Pardue) and one in late July in the Hickory-Conover, NC, area (Adam Martin).

COOPER'S HAWK: This species is seen much more frequently in summer in the Carolinas than the Sharp-shinned. Some of the more interesting reports included two successful nestings in the Winston-Salem, NC, area in June (*fide* Ramona Snavelly), one far to the east near Acre, Beaufort County, NC, June 14 (Frank Enders), an immature at Latta, Dillon County, SC, June 14 (Lex

Glover), and at least five reports from the North Carolina mountains (Norma Siebenheller, Simon Thompson).

BROAD-WINGED HAWK: One along US 64 in Washington County, NC, June 22 (Jeff Pippen) was east of the normal range.

GOLDEN EAGLE: The adults found in the L. Toxaway, Transylvania County, NC, area during the spring were still there as of July 3 (Doc Murphy, *fide* Norma Siebenheller).

AMERICAN KESTREL: Three nests were found on the Savannah River Site, SC, this summer (Heather Galloway & Carrie Hamilton, *fide* Anne Waters). Two young fledged from each of two nests, with the third nest failing. Also two young were found out of another unlocated nest!

PEREGRINE FALCON: Interesting summer season reports involved two at Pisgah Forest, Transylvania County, NC, June 24 (Norma Siebenheller) and one at Jackson Park, Hendersonville, NC, July 13 (Simon Thompson).

RUFFED GROUSE: A rare sighting of an albino grouse was had along the Kanuga Road, Transylvania County, NC, June 28 (Rick Mills, *fide* Norma Siebenheller).

AMERICAN COOT: In North Carolina two summered at Twin Lakes, Sunset Beach (Mary McDavit), and two were present all summer near Rocky Mount, Edgecombe County (Ricky Davis). No breeding evidence was noted.

SEMPALMATED PLOVER: A late spring migrant was at Goldsboro, NC, June 3 (Eric Dean).

AMERICAN AVOCET: One along the Morehead City - Beaufort, NC, causeway July 21 (Jimi Moore) was locally unusual.

WILLET: One was rare inland at Jordan Lake, NC, July 7 (Ricky Davis). The bird was in the exact same spot as a Willet during the spring. Could it have been the same bird on its southbound migration?

LONG-BILLED CURLEW: The only reports included one over North Pond, Pea Island NWR, NC, July 23 (M. & B. Peters) and one at the usual Portsmouth, NC, spot July 27 (John Wright, John Fussell, Bob Holmes *et al.*).

SEMPALMATED SANDPIPER: Ten was a good count inland at Goldsboro, NC, June 3 (Eric Dean).

CURLEW SANDPIPER: As usual the only report came from North Carolina's Outer Banks, with one at the Salt Flats, Pea Island NWR July 26-29 (John Fussell *et al.*; Keith Camburn).

STILT SANDPIPER: One was locally rare inland at Charlotte, NC, July 14 (Taylor Piephoff).

COMMON SNIBE: One was flushed from a field near Brevard, NC, on the amazing date of June 15 (Jack Hudson, Susan Mitchell, Dorothy Hollis). Was this a non-breeding summering bird or just an unusually late migrant?

AMERICAN WOODCOCK: An early fall Woodcock was found at Stumpy Point, Dare County, NC, July 24 (John Fussell).

WILSON'S PHALAROPE: The only reports included one at the Savannah Spoil Site, SC, July 17 (Steve Calver) and three at the Salt Flats, Pea Island NWR, NC, July 28 (John Wright *et al.*).

LONG-TAILED JAEGER: Two off Oregon Inlet, NC, June 2 (Armas Hill *et al.*) were spring migrants.

POMARINE JAEGER: During Tropical Storm Arthur, three Pomarines were seen from shore at Atlantic Beach, NC, June 19 (John Fussell).

SOUTH POLAR SKUA: The only report this summer was of one off Hatteras, NC, June 22 (Brian Patteson *et al.*).

RING-BILLED GULL: Twelve was a good count for early migrant Ring-billeds in Lincoln County, NC, July 27 (David Wright).

HURRICANE BERTHA: Hurricane Bertha hit North Carolina on the evening of July 12, causing considerable damage. Bird transport with this storm was disappointing in North Carolina with very few pelagic species being found (Wilson's Storm-Petrels were the only pelagics reported). The storm did however, bring coastal terns inland. Highlights on July 13 included 20+ Royals, 4 Sandwich, and 3 Least in Goldsboro (Eric Dean); 9 Royals, 1 Sandwich, 1 Gull-billed, 18 Forster's, and 6 Least at the Pactolus, Pitt County Catfish Ponds (Ricky Davis); and 8 Royals, 20 Forster's, and 5 Least at L. Phelps, Washington County (Ricky Davis). Other tern reports included one Royal, 5 Forster's, and one Least in Rocky Mount (Ricky Davis), and one Least south of Fayetteville (Hal Broadfoot). Single Black Skimmers were at L. Phelps (Ricky Davis) and L. Mattamuskeet (Kelly Davis).

ROYAL TERN: Probably unrelated to Bertha, but still unexplainable, was the report of 7 Royals near Jackson, SC, July 21 (Calvin Zippler, George Reeves, *fide* Anne Waters). Royals inland anywhere in the Carolinas, not storm related, are extremely rare.

LEAST TERN: Rare inland reports involved one at Harleyville, Dorchester County, SC, June 23 (Lex Glover, Bert Fisher) and one at Buckhorn Reservoir, Wilson County, NC, July 6 (Ricky Davis).

SOOTY TERN: One was at Hatteras Inlet, NC, June 24 (*fide* Marcia Lyons), and another (possibly related to Bertha) was seen from shore at Pawleys Island, SC, July 13 (Robin Carter, Caroline Eastman).

ROSEATE TERN: Summer reports included a very locally rare sighting of an adult at Holden Beach, NC, June 4 (Harry LeGrand) and a less rare but good count of four flying south past the Outer Banks Pier July 26 (Mike O'Brien, Ned Brinkley, L. Zematis).

ARCTIC TERN: An adult was photographed on the beach at Ft. Macon, NC, June 4 (Bob Machover *et al.*) for an extremely rare onshore report.

BLACK TERN: Black Terns seemed down this year, with the only reports being one at Goldsboro, NC, July 13 after Hurricane Bertha (Eric Dean), two south of Fayetteville, NC, July 14 after Bertha (Hal Broadfoot), and a good count of 80 flying south past the Outer Banks Pier July 26 (O'Brien *et al.*).

EURASIAN COLLARED-DOVE: At least one dove survived Hurricane Bertha at the N. Topsail Island, NC, colony when Rick Knight observed a single bird July 29.

COMMON GROUND-DOVE: Two pairs spent the summer near Jackson, SC, (Dan Connely, *fide* Anne Waters). This area is probably outside the normal inland range for the species.

WHITE-WINGED DOVE: One was at Harbor Island, SC, June 28 through July 10 as reported by Judy and George Halleron. Rare but not too unusual, this one follows the White-winged reported from the Bennett's Point area this past winter.

CHUCK-WILL'S-WIDOW: A rare observation of a nesting Chuck was had far to the west at Tryon, NC, July 20 when Simon Thompson saw a female on a nest with two eggs. Later two young were seen in the vicinity.

WHIP-POOR-WILL: On the eastern edge of the breeding range, an excellent count of 7 (within a mile or so) in Holly Shelter, Pender County, NC, was had June 26 (Nell Moore).

BELTED KINGFISHER: An unusual offshore sighting involved a Kingfisher 15 miles out of Hatteras, NC, July 28 (Brian Patteson *et al.*). This seems a bit early for a migrant.

GRAY KINGBIRD: The pair found at Ft. Caswell during May was later seen to be sitting on a nest during June (David Wright, Taylor Piephoff, Ricky Davis), but no nesting success was documented. The birds were still present at the end of the month. Potential nesting in the state was last documented in the early 1960's at nearby Southport.

SCISSOR-TAILED FLYCATCHER: One was found in the NC Sandhills area of Foxfire Village - Derby this summer (*fide* Dick Burk). This follows a May sighting nearby. Could it be the same bird?

HORNED LARK: Two near Aurora, Beaufort County, NC, June 11-12 (*fide* Sam Cooper) were outside the eastern range for the species in the state.

WHITE-BREASTED NUTHATCH: Locally rare and unexpected was one White-breasted found on the Dare County, NC, Bombing Range July 5 (John Fussell).

HOUSE WREN: One found singing on Roan High Knob, Mitchell County, NC, June 24 (Rick Knight) was at an unusually high elevation (6250') for the species in summer.

CEDAR WAXWING: Summer reports east of the normal range included one near Apex, Chatham County, NC, June 7 (Merrill Lynch); one at L. Phelps, Washington County, NC, July 13 (Ricky Davis); and four all summer at Stumpy Point, Dare County, NC (John Fussell).

LOGGERHEAD SHRIKE: Documented nestings of this species in the Carolinas are always noteworthy. This summer one pair nested successfully (two young fledged) in Chester County, SC, in July (James Lasley), and one adult with three young was seen near the coast on the UNC-W campus, Wilmington, NC, in early July (Sam Cooper).

BLACK-THROATED BLUE WARBLER: Two singing males were on Sassafras Mountain, SC, in early June (Jennifer Wren) and two males were at Bat Cave Preserve, NC, June 7 (Simon Thompson). Breeding in South Carolina is known definitely from Caesars Head and possibly from Sassafras Mountain. Further summer observations are needed at Sassafras.

BLACK-THROATED GREEN WARBLER: John Fussell found this species to be the fourth most common warbler on the Dare County, NC, mainland. This suggests that the Dare population is extremely important to the coastal plain population as a whole.

BLACKBURNIAN WARBLER: A very early migrant was noted at Oriental, NC, in late July (Dorothy Foy).

BLACK-AND-WHITE WARBLER: This species seemed more common in the eastern portions of its range on the coastal plain. Three territorial birds were found in Hoffman Forest, Onslow County, and singles were found in Duplin and Pender Counties in June (Nell Moore). One was found in Horry County, SC, in June (Jack Peachey, Mark Wilson). Also five on the Arcola BBS route in Warren County, NC, June 2 (Harry LeGrand) provided an excellent count for that location.

SWAINSON'S WARBLER: This species seemed to be more common this year than the past several years (sev. ob.). Also one on territory in southeastern Avery County, NC, July 14 (Harry LeGrand) provided a very rare summer record for that county.

OVENBIRD: John Fussell had 12 in one mile in mainland Dare County, NC, June 27 for an excellent total for the coastal plain.

LOUISIANA WATERTHRUSH: Locally unusual summer records involved birds on the eastern edge of their range. One juvenile was seen at Pettigrew State Park, L. Phelps, NC, June 22 (Harry LeGrand), and a male was on territory in Georgetown County, SC, in June (Mark Wilson, Jack Peachey, Phil & Sharon Turner).

MOURNING WARBLER: An rare report involved the bird heard singing along the Blue Ridge Parkway near Mt. Mitchell, NC, June 1 (David Wright, Taylor Piephoff). It is not known if this was a late migrant or a territorial bird.

DICKCISSEL: Summer reports included up to two at the VOA-B site in Pitt County, NC, during June (John & Paula Wright); two singing males in Anderson County, SC, June 7 (Steve Wagner); two males in a field north of Pettigrew State Park, L. Phelps, NC, July 21 (Harry LeGrand); two males north of Shelby, NC, June 3 through the summer (Simon Thompson); two near Aurora, Beaufort County, NC, June 12 (Sam Cooper); and one at Fountain Inn, Laurens County, SC, June 15 (Lex Glover).

SAVANNAH SPARROW: One was found on territory at the Ashe County Airport, W. Jefferson, NC, June 11-12 (Harry LeGrand, Merrill Lynch). I hope this will continue to be a location for this local breeder in our mountains.

HENSLOW'S SPARROW: John & Paula Wright once again conducted censuses on the VOA sites in Beaufort and Pitt Counties. This year 67 males were counted June 1-2 at VOA-A, and 31 males were at VOA-B. These totals are considerably less than the last couple of years, but it is too early to tell if it is a decline or just a normal fluctuation.

SHARP-TAILED SPARROW: One was seen at the Salt Flats, Pea Island NWR, NC, July 28 (Jeff Lewis). This is a site where possible breeding behavior has been noted in the past; and the date of this year's sighting is too early for a migrant.

DARK-EYED JUNCO: A male was seen feeding two young at Bat Cave Preserve, NC, June 7 (Simon Thompson) for a locally unusual breeding season record (slightly out of the normal range for the species).

BOBOLINK: Two family groups were seen this July in Transylvania County, NC, where breeding has occurred in past years (Ules Bryson, Bill & Norma Siebenheller). Elsewhere late birds included five at the Savannah Spoil Site, SC, June 15 (Steve Calver) and one north of Rocky Mount, NC, June 3 (Ricky Davis).

YELLOW-HEADED BLACKBIRD: The only report was of one adult male at the Salt Flats, Pea Island NWR, NC, July 28 (Jeff Lewis, John Wright *et al.*).

BALTIMORE ORIOLE: A pair nested near the Silver Bluff Audubon Sanctuary, Jackson, SC (Paul Koehler, *fide* Anne Waters), this summer for a

locally rare occurrence. Also one was an early migrant at Ft. Fisher, NC, July 28 (Greg Dodge).

RED CROSSBILL: North Carolina reports this summer included a pair at Mt. Mitchell State Park June 1 (*fide* Simon Thompson); two at Jones Gap, Macon County, June 15 (Harry LeGrand); and one along the Blue Ridge Parkway, Transylvania County, June 29 (Simon Thompson *et al.*).

PINE SISKIN: Good numbers were found in the mountains this summer. Twenty were on Roan Mountain most of June (Rick Knight) and 25+ were at Mt. Mitchell June 5, with one female seen carrying nesting material (Simon Thompson). Totally unexpected was one at a feeder in mid-July near West End, NC, in the Sandhills area (Dick & Lois Dale, *fide* Dick Burk)!

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Cover photo by Jimmy Wood, Camden, SC. Feathers courtesy SC Department of Natural Resources.

The Status and Distribution of Wading Birds in South Carolina, 1988 - 1996

*Biologists Report Results of Years of Research
Into These Popular Species*

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INTRODUCTION

In this paper, we present an overview of recent trends in the status and distribution of wading birds in South Carolina. Although historic information is available on wading bird nesting in the Carolinas, it is almost exclusively qualitative in nature. In addition, it is found primarily in unpublished reports and letters which are difficult for researchers to access. Due to their limited scope and qualitative nature, these historic records seldom provide useful information for assessing the size and distribution of wading bird populations during the early part of this century.

The first attempt to determine the status and distribution of wading birds in South Carolina was initiated by the U.S. Fish and Wildlife Service in 1975 as part of an overall survey of the Atlantic coast (Custer and Osborn 1978). Survey efforts were restricted to the coastal zone, and the Service only checked historic inland colonies for activity. Consequently, only 22 colonies were located in South Carolina.

Because of the lack of information on the size of wading bird populations and the increasing threat to foraging and nesting habitat from residential and industrial development, the South Carolina Department of Natural Resources initiated a study in 1988 to determine the status and distribution of wading bird nesting on the coastal plain. In this paper, we summarize and report the results of the 1988, 1989, 1994, and 1996 surveys and compare the status of 13 species of wading birds. In addition, we rank colonies by their relative importance using a numerical scoring system.

METHODS

Beginning in 1988, we conducted aerial surveys of all known wading bird colonies in the coastal plain of South Carolina to determine nesting status (Post and Gauthreaux 1989). We documented colonies from published literature (Custer and Osborn 1978), the Colonial Bird Register (1989), the South Carolina Colonial Waterbird Database (1996), and 10 years of incidental data collected by the Wildlife Diversity Section of the South Carolina Department of Natural Resources.

Because Great Blue Herons and Great Egrets initiate nesting earlier than other wading birds in South Carolina, we began surveying for these species in mid-late April. We surveyed all other species beginning in the 2nd week in May. In 1989 and 1996, we also located colonies during aerial surveys flown on transect lines parallel to the Atlantic coast. In 1989, we flew transects at 5 nm intervals from the coastline to 40 miles inland and at 10 nm intervals from 40 to 80 miles inland. In 1996, we reduced transect spacing to 5 km intervals from the coastline to 70 km inland. In addition, we flew all major river drainages from 70 km to 135 km inland. We conducted transect surveys in May, when nesting had begun in all colonies.

Once located, we obtained an aerial count or estimate (Dodd and Murphy 1995) for each active colony. During the 1988, 1989, 1994, and 1996 nesting seasons, we visited all colonies containing more than 30 nests on the ground, with the exception of between 2 - 4 colonies for which we could not obtain landowner permission. During this visit, we conducted a complete ground count (Dodd and Murphy 1995) of wading bird nests.

We included thirteen species of colonial wading birds and related tree and shrub-nesting waterbird species in our surveys (Table 1). However, several species (Black-crowned Night-Herons, Yellow-crowned Night-Herons, and Anhingas) are semi-colonial and are often found nesting on the periphery of colonies (M. Dodd, pers. observ.). We recorded nests of these species when located, but our statewide totals represent only a fraction of the nesting attempts.

We visited colonies between the peak of incubation and when chicks are capable of climbing from the nest structure. In some multi-species colonies, we made an additional visit to account for the difference in nesting chronology between large and small wading bird species (Table 2). In addition, we revisited all known White Ibis colonies in July to account for any late nesting attempts. We distinguished wading bird nests by their relative size and placement in the canopy (McCrimmon 1978). Because the nests and eggs of Little Blue Herons, Tricolored Herons, and Snowy Egrets are difficult to identify to species, we timed census visits so that nestlings were visible.

Table 1. Waterbird species nesting in South Carolina colonies, 1988-96.

Common name	Scientific Name
Anhinga	Anhinga anhinga
Black-crowned Night-Heron	Nycticorax nycticorax
Cattle Egret	Bubulcus ibis
Double-crested Cormorant	Phalacrocorax auritus
Glossy Ibis	Plegadis falcinellus
Great Blue Heron	Ardea herodias
Great Egret	Casmerodius albus
Little Blue Heron	Egretta caerulea
Snowy Egret	Egretta thula
Tricolored Heron	Egretta tricolor
White Ibis	Eudocimus albus
Wood Stork	Mycteria americana
Yellow-crowned Night-Heron	Nyctanassa violacea

Because Little Blue Heron nests are often clumped in a single area in a colony, the relative distribution of nests in the colony was also used to aid in the identification of nests (M. Dodd pers. observ.).

Assessment of Nesting Trends

Although we report minimum statewide nest counts for each species, we often used estimation techniques with our ground counts to obtain statewide totals. The variability of these estimation techniques (see Dodd and Murphy 1995) must be taken into account when assessing trends in wading bird nesting populations. Therefore, we adjusted nest estimates and calculated approximate 95% confidence limits for the statewide nesting effort based on the regression relationship between ground counts and corresponding technique estimates (Dodd and Murphy 1995). Overlap of approximate confidence limits indicates that annual estimates are not different. If we did not use estimation techniques and conducted only ground counts to obtain statewide totals, we made no adjustments to nest counts and did not calculate confidence limits.

Table 2. Census dates for South Carolina wading bird colonies, 1988-1996. Wading bird species are combined into groups to facilitate the planning of census visits. The interval roughly corresponds to the time between the peak of incubation and when chicks are able to leave the nest (Post 1985, M. Dodd, pers. observ.).

Nesting species by group	Optimal census dates
Great Blue Heron	April 1 - April 21
Great Blue Heron- Great Egret	April 21 - May 1
Great Egret-Wood Stork- small waders ^a	May 1 - May 14
Small waders	May 14 - May 31
Small waders- Cattle Egrets- Ibis spp.	May 21 - June 7
Cattle Egrets- Ibis spp.	June 7 - June 21
Great Egrets- small waders- (2 censuses)	April 21 - May 1
Cattle Egrets- Ibis spp.	June 7 - June 21

a The small wader group includes Anhinga, Little Blue Heron, Snowy Egret, Tricolored Heron, Black-crowned Night-Heron, and Yellow-crowned Night-Heron.

We used aerial photographic counts, point counts, or perimeter counts (Dodd and Murphy 1995) when a colony was discovered late in the season and potential nest disturbance prevented us from conducting a complete ground count. Unfortunately, these counting techniques were found to be so highly variable in estimating Great Blue Heron nests (Dodd and Murphy 1995) that our confidence limits were often wider than the total population estimate. Because the number of nests counted with aerial photographic, point, or perimeter techniques generally accounted for less than 5% of the total statewide nesting anyway, we excluded from our assessment of nesting trends the counts we obtained using those techniques.

Nesting Distributions

We used distribution-free, multi-response permutation procedures (MRPP) (Mielke 1976, Slauson *et al.* 1991) to calculate the probability of the annual colony distributions being the same. We chose Euclidean distance measures

(deviations) for MRPP statistics because of their greater power to detect differences between skewed, non-normal distributions.

Size Class Distributions

For each survey year, we calculated the proportion of colonies in each of seven size classes. We used a Chi-square Test of Homogeneity to test for differences in the proportion of colonies in size classes between survey years.

Colony Rankings

We ranked colonies for relative importance according to a system developed by Runde (1991). This ranking scheme is based on colony size, species richness, history of activity, and the combined biological score of each nesting species (Appendix A). Because the ranking system required a history of nesting, we did not calculate rankings for 1988, the first year of our study.

RESULTS AND DISCUSSION

Abundance and Distribution of Wading Birds (All Species Combined)

We found 96 - 180 active wading bird colonies from aerial surveys conducted from 1988 to 1996 (Table 3). The increase in the number of colonies during our study does not necessarily represent a real increase in colonies but is partly a result of the cumulative effects of the surveying program. Although we were not able to quantify the accuracy of our survey technique, we occasionally failed to locate very small colonies and colonies containing only dark-colored birds. In 1994 and 1996, we found that several of the newly discovered small colonies had been active in previous survey years. We suspect, however, that we were more efficient at locating large colonies. For example, we located only 1 large colony (more than 250 nests) which we could verify as having been active in a previous survey year. The increase in the number of colonies during the study is primarily a result of the addition of small colonies.

We located colonies throughout the coastal plain of South Carolina, as far inland as Aiken, Kershaw, and Marlboro counties (see Figure 1). However, 64 - 80% of the colonies were found in the 6 coastal counties (Figures 2-5). In addition to the coastal nesting, a large number of colonies were associated with the Cooper and Wateree river drainages and lakes Marion and Moultrie. With the exception of Cattle Egrets, the distribution of wading bird colonies in South Carolina can at least be partially explained by the distribution of wetland habitats. Wading bird nesting was grossly correlated with total wetland area in coastal counties (Dodd and Murphy, in prep.). Although high quality

Table 3. Summary of colonial waterbird (all species combined) nesting sites in South Carolina, 1988, 1989, 1994, and 1996.

	1988	1989	1994	1996
Number of colonies	96	108	143	180
Minimum nest estimate	36,647	59,483	46,510	52,587
Average size (nests)	340	551	325	292
SD	927.9	1,684.0	1,125.9	1,554.4
Minimum size	2	1	1	1
Maximum size	6,115	11,682	9,462	20,356

nesting sites appear to be limited in some areas, the pattern of nesting is consistent with the availability of foraging habitat.

The spatial distribution of colonies did not differ between survey years ($P = 0.80$), suggesting that there were no large scale shifts in colony location. The stability of the distribution of wading bird colonies was likely a result of the relative stability of wetland habitat during our study.

The total number of wading bird nests fluctuated during our study with high counts of 59,483 and 52,587 in 1989 and 1996, respectively (Table 3). The fluctuations in nest totals were primarily a result of a single species, White Ibis. Average colony sizes were similar for all survey years, but nearly doubled in size during the 1989 nesting season. Maximum colony size ranged from 6,115 to 20,356 nests.

Between forty-one and 53% of the colonies were in the smallest size class (< 30 nests, Figure 6). Less than 5% of the colonies contained > 3000 nests. There was no difference in colony size class distributions between survey years ($\chi^2 = 14.89$, $df = 18$, $P = 0.67$).

The lack of change in the spatial distribution of colonies and the colony size class distributions suggest that wading bird nesting populations in South Carolina were stable during our study. However, because we included species in the statewide nesting totals for which we have incomplete surveys, assessments of trends in wading bird nesting populations will be made on a species by species basis.



Figure 1. Locations of South Carolina counties

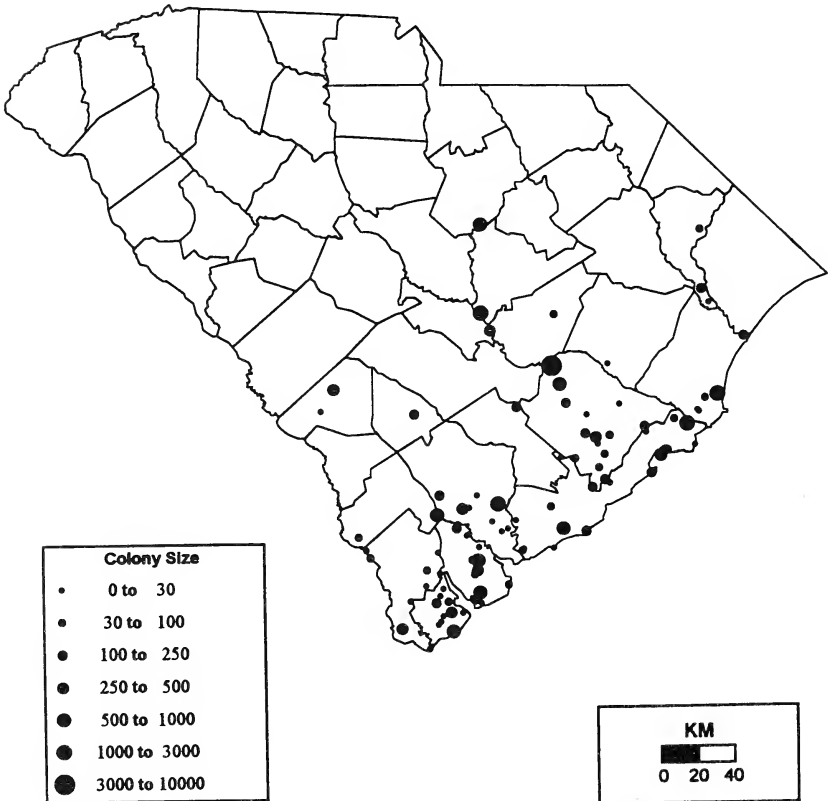


Figure 2. Wading bird nesting locations in South Carolina, 1988.

n = 96

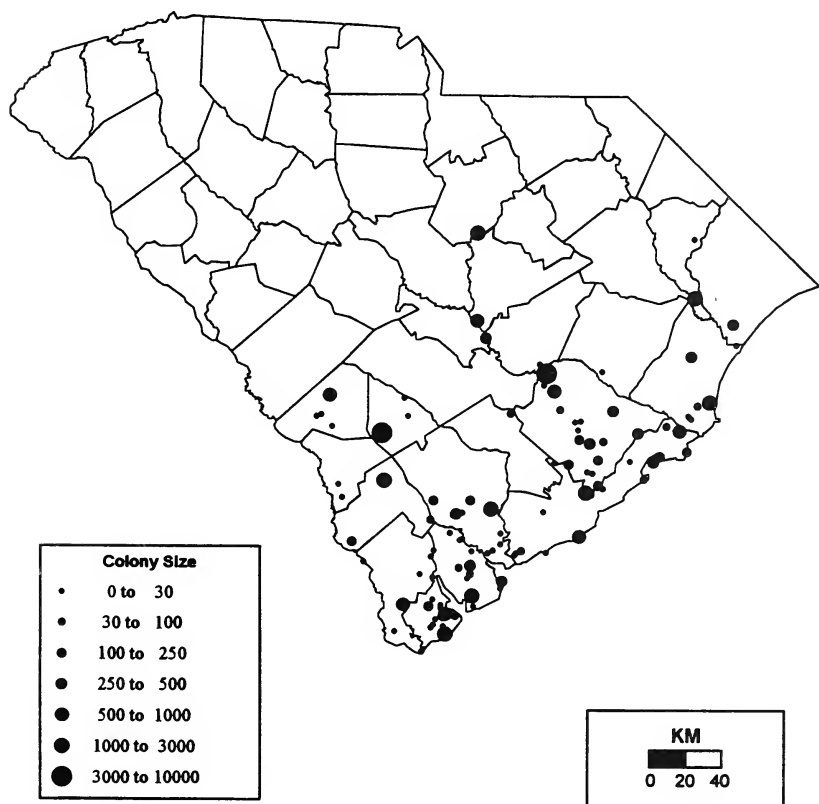


Figure 3. Wading bird nesting locations in South Carolina, 1989.

n = 108

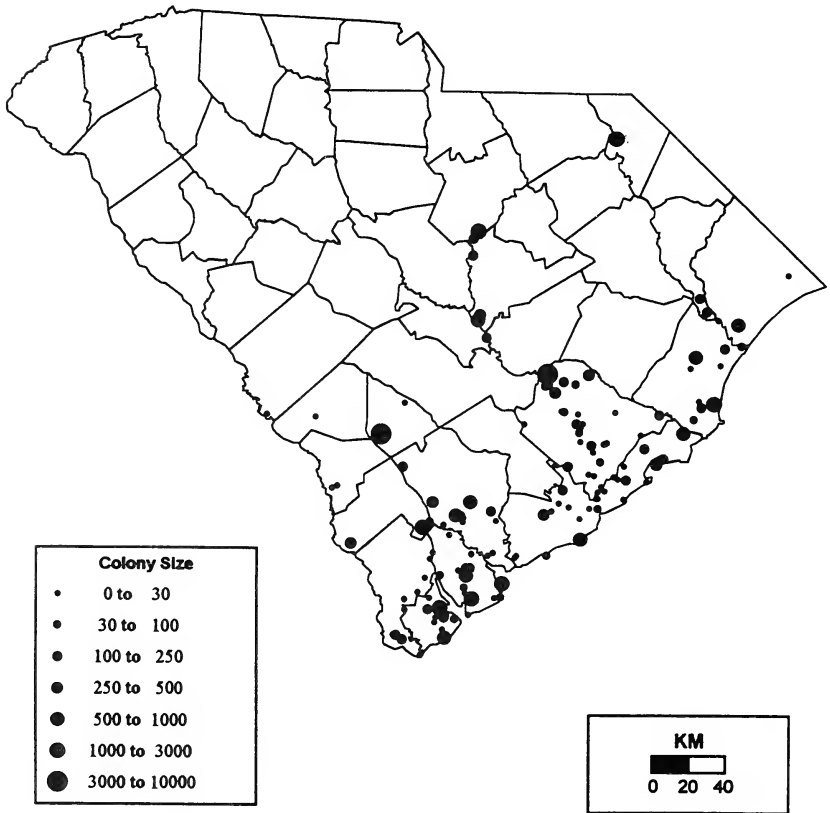


Figure 4. Wading bird nesting locations in South Carolina, 1994.

n = 143

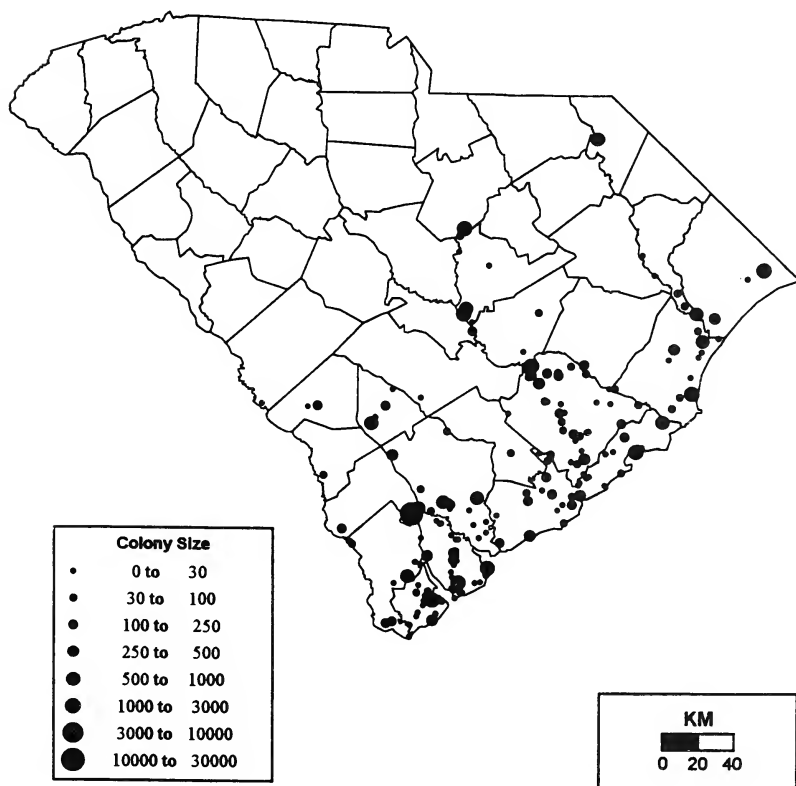


Figure 5. Wading bird nesting locations in South Carolina, 1996.

n = 180

Abundance and Distribution of Individual Species

All wading bird species found nesting in South Carolina occur in multi-species colonies (S. C. Colonial Waterbird Database 1996). In the following section, colony characteristics such as average colony size will refer to a individual species rather than the entire multi-species colony. However, an individual species' nesting totals may represent only a small portion of the total colony size.

White Ibis

Historically the two largest White Ibis colonies in South Carolina were located in coastal estuaries (Bildstein *et al.* 1990, S. C. Colonial Waterbird Database 1996). During our study, the majority of nesting was found in large inland colonies associated with freshwater habitats (Figure 7). We did not detect a change in the spatial distribution of colonies between 1988 and 1996 ($P = 0.999$).

White Ibis were the most abundant ciconiiform nesting in South Carolina, with a 4-year minimum nest total of 56,294 (Table 4). Although estimation techniques were used during colony censuses, insufficient samples were available to establish a regression relationship between technique estimates and complete ground counts. Therefore, we rely on minimum nest counts to assess changes in the nesting population. These minimum nest counts must be viewed with caution because they usually represent an undercount of nesting attempts (Dodd and Murphy 1995). Based on minimum counts, White Ibis nesting populations fluctuated extensively between years, with nest totals ranging from 9,476 to 20,798 nests (Table 4).

Average and maximum colony sizes were more than twice as large as other wading bird species included in our study. Average colony size fluctuated with nest totals. Nesting was generally concentrated in fewer than 10 colonies in which White Ibises were the dominant species. Over 50% of nesting attempts in a given year were in colonies containing over 1,000 nests (Figure 8). We found a significant difference in the proportion of colonies in size classes between years ($\chi^2 = 242.69$, $df = 18$, $P < 0.0001$). Although White Ibis used many of the same nesting sites during our surveys, nest totals within these sites fluctuated greatly.

White Ibis nesting fluctuated extensively during our surveys. The variability in annual nesting makes it difficult to assess nesting trends. Despite this variability, South Carolina appears to maintain a minimum nesting population of approximately 10,000 pairs annually. However, due to their nomadic nature (Frederick *et al.* 1996), it may be necessary to examine nesting

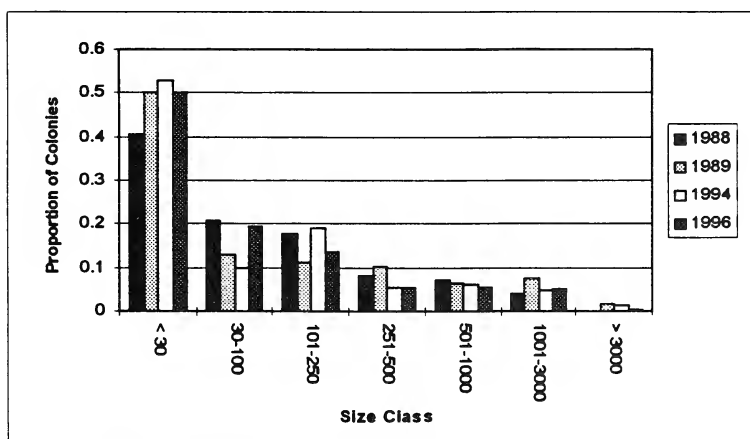
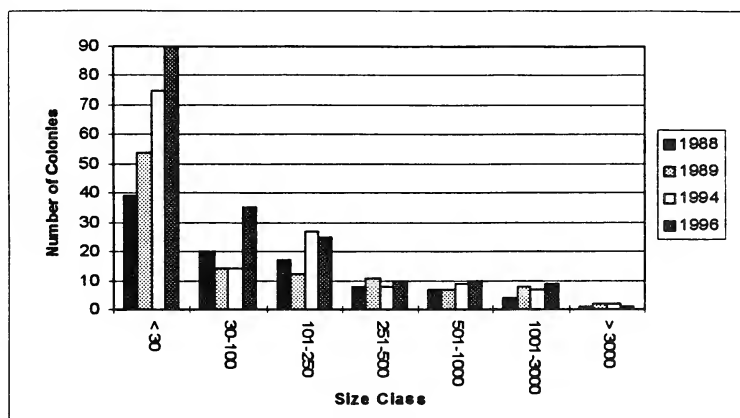


Figure 6. Numbers and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

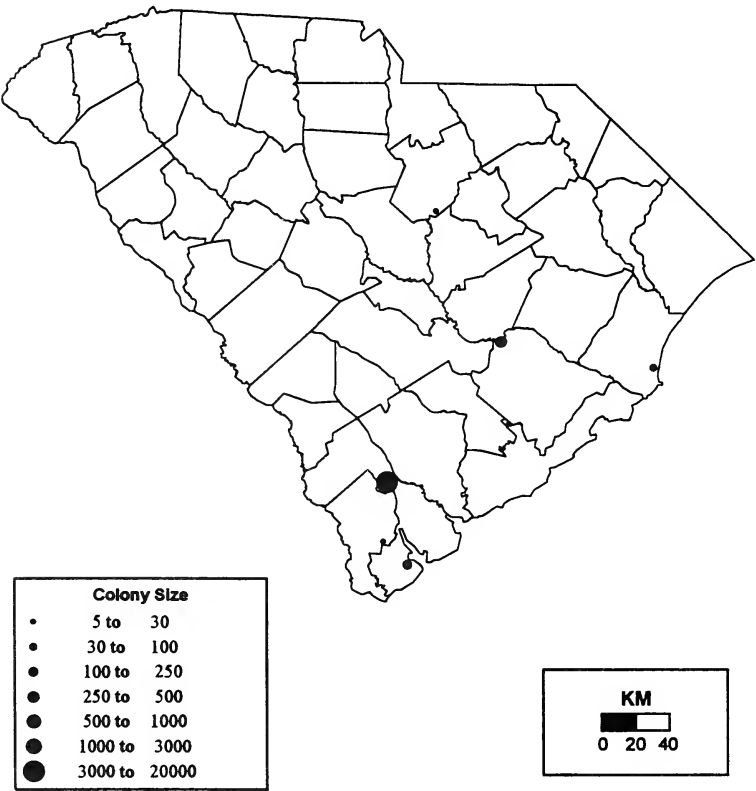


Figure 7. White Ibis nesting locations in South Carolina, 1996.

Table 4. Summary of nesting sites for 13 species of colonial waterbirds in South Carolina, 1988, 1989, 1994, and 1996.

Species	Year	No. colonies	Minimum ^a nest est.	Avg. ^b colony size	SD	Min nests	Max. nests
White Ibis	1988	6	9,618	1,603.00	1,414.50	60	3745
	1989	8	20,798	2,599.75	2,822.26	9	7789
	1994	5	9,476	1,895.20	3,076.41	1	7296
	1996	6	16,402	2733.67	6415.53	5	15,827
Cattle Egret	1988	26	8,283	318.58	694.30	1	3528
	1989	27	19,206	711.33	1,274.30	1	5003
	1994	26	15,957	613.73	1,383.69	2	6454
	1996	29	11,035	380.52	673.90	2	3323
Great Egret	1988	54	4,796	88.81	165.00	1	779
	1989	53	5,111	96.43	179.73	1	820
	1994	57	6,980	122.46	258.24	1	1711
	1996	70	8,798	125.69	266.76	1	1987
Snowy Egret	1988	30	3,233	107.77	141.43	1	470
	1989	24	4,606	191.92	243.48	1	842
	1994	35	3,691	105.46	179.71	1	813
	1996	38	3,912	102.95	185.46	1	870
Great Blue Heron	1988	52	2,777	53.40	143.62	1	837
	1989	59	2,506	42.47	116.05	1	693
	1994	90	2,547	28.30	77.02	1	619
	1996	110	2,655	24.14	58.51	1	549
Tricolored Heron	1988	22	1,736	78.91	162.30	1	741
	1989	22	2,412	109.64	190.75	1	767
	1994	27	2,071	76.70	128.38	1	570
	1996	31	2,318	74.77	159.60	1	673
Little Blue Heron	1988	27	782	28.96	33.44	1	115
	1989	32	2,693	84.16	88.38	1	303
	1994	32	2,058	64.31	85.98	1	334
	1996	42	2,125	50.60	86.45	1	466
Anhinga	1988	34	921	27.09	42.22	1	164
	1989	28	937	33.46	58.40	1	238
	1994	49	1,397	28.51	36.26	1	155
	1996	74	1,879	25.39	40.17	1	241
Wood Stork	1988	3	179	59.67	42.34	23	106
	1989	3	376	125.33	136.64	21	280
	1994	7	712	101.71	127.74	2	372
	1996	7	953	136.14	128.92	3	398

Species	Year	No. colonies	Minimum ^a nest est.	Avg. ^b colony size	SD	Min nests	Max. nests
Double-crested Cormorant	1988	2	72	36.00	43.84	5	67
	1989	4	58	14.50	9.11	5	26
	1994	8	515	64.38	125.33	2	368
	1996	10	895	89.50	134.55	4	447
Yellow-crowned Night-Heron	1988	0	0	0	0	0	0
	1989	5	35	7.00	3.74	4	13
	1994	4	507	126.75	228.29	5	469
	1996	11	973	88.45	259.48	1	870
Black-crowned Night-Heron	1988	15	153	10.20	12.13	1	48
	1989	24	489	20.38	52.12	1	257
	1994	26	311	11.96	19.17	1	89
	1996	29	284	9.79	17.79	1	96
Glossy Ibis	1988	3	97	32.33	42.19	6	81
	1989	4	256	64.00	107.54	1	224
	1994	4	288	72.00	117.33	13	248
	1996	2	358	179.00	229.10	17	341

a Statewide nest estimate based on minimum counts. Counts were not adjusted using the regression equation for the relationship between census technique estimates and ground counts.

b Average number of nests/colony.

trends on a larger scale (regional) to assess the health of White Ibis populations.

Cattle Egret

Cattle Egret colonies were widely distributed throughout the study area, however, all large colonies were located in the upper coastal plain (Figure 9). In large colonies, Cattle Egrets were the dominant species accounting for up to 99% of a colony's nesting. In colonies closer to the coast they often accounted for a small portion of the total nesting. We found no difference in the spatial distribution of Cattle Egret colonies between years ($P = 1.0$).

Cattle Egrets were the second most abundant wading bird species nesting in South Carolina during our study. Average colony sizes were larger than all other species except White Ibis. Approximate confidence limits for nest estimates indicated an increase in nesting between 1988 and 1989, and a small decrease between 1994 and 1996 (Figure 10). The increase in nesting between 1988 and 1989 was partially a result of a large colony of approximately 2,500 nests which was not located in 1988 and later determined to be active from observer accounts. In addition, we suspect we missed another large colony in Bamberg County in 1988, but we could not confirm this from eyewitnesses.

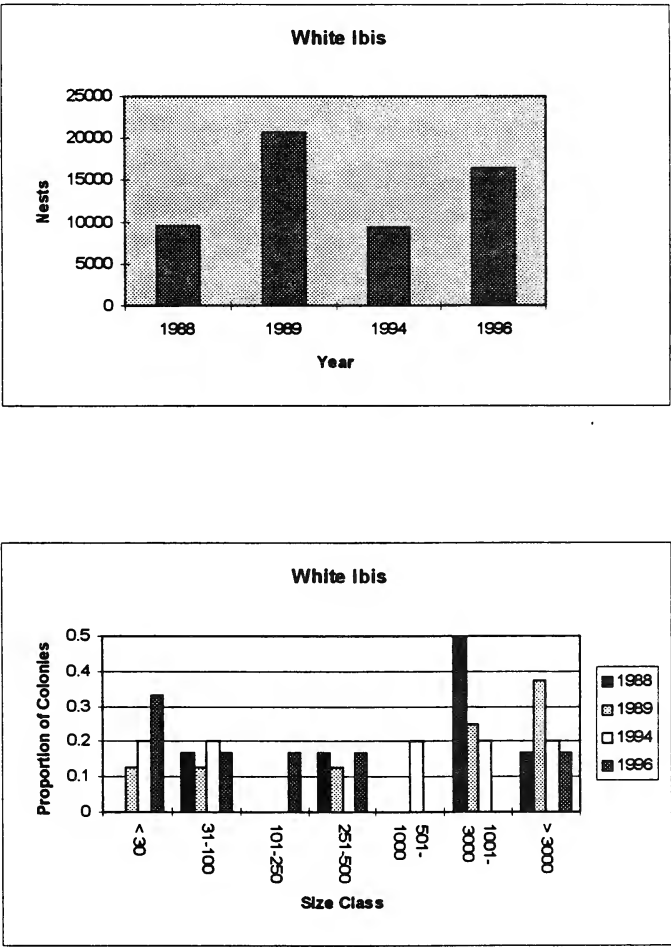


Figure 8. White Ibis nesting trends and relative proportion of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

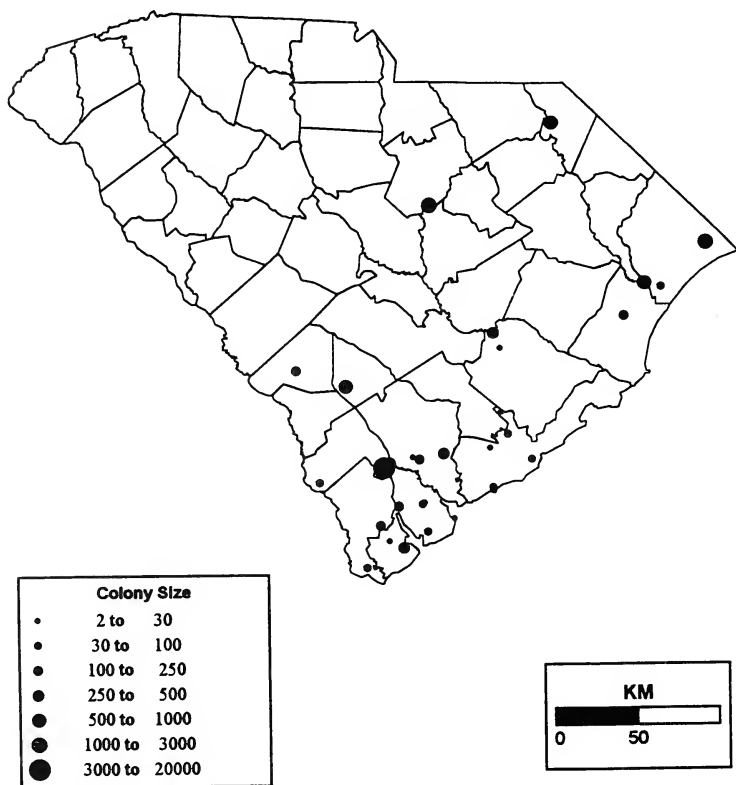


Figure 9. Cattle Egret nesting locations in South Carolina, 1996.

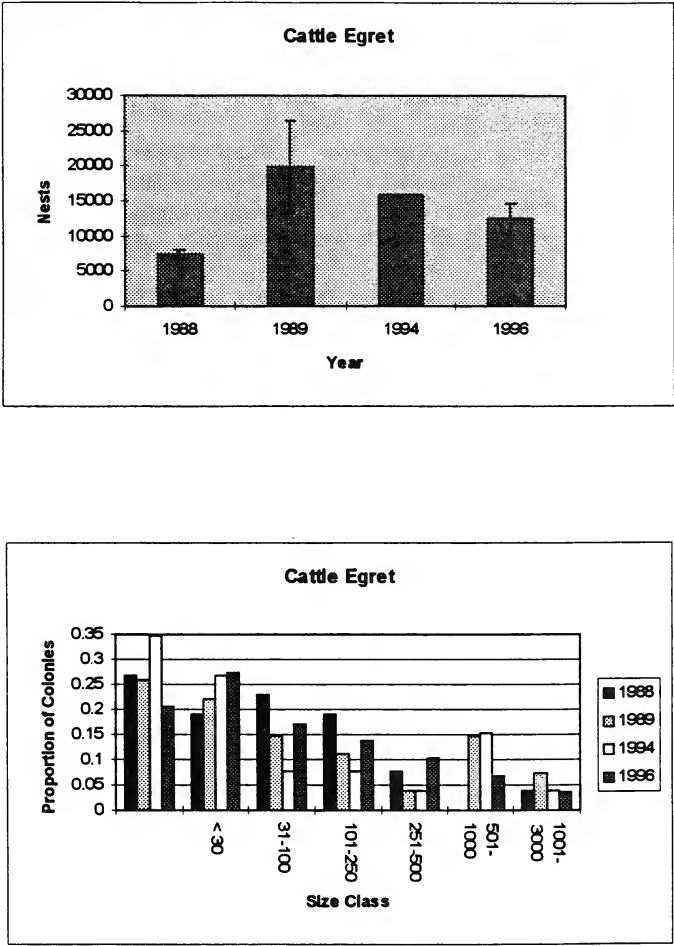


Figure 10. Cattle Egret nesting trends and ther relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

Even if these 2 colonies were included in 1988 totals, we would still see an increase of approximately 5,000 nesting pairs in 1989.

Compared with other wading bird species, there was a higher proportion of colonies in the medium and large size classes (the class comprising more than 250 nests). In addition, we found a significant difference in the proportion of colonies in size classes between survey years ($\chi^2 = 43.37$, $df = 18$, $P = 0.001$). This difference is likely a result of a larger proportion of colonies in the smallest size classes in 1994 and relatively higher proportions of colonies in the middle size classes in 1996 (Figure 10). Colony sizes ranged from 1 to 6,454 nests.

Based on analysis of nesting trends, colony distribution and size class information, the Cattle Egret nesting population appears to be stable or slightly declining in South Carolina. Annual fluctuations ranged from approximately 11,000 to 19,000 nesting pairs. Additional surveys will be necessary to better understand annual fluctuations in Cattle Egret nesting.

Great Egret

Great Egrets were ubiquitous and had the widest nesting distribution of any of South Carolina's waterbirds. Although they were widely distributed, most nesting was found in the 6 coastal counties (Figure 11). In addition, Great Egret nesting was found to be correlated with total wetland area in the coastal counties (Dodd and Murphy, in prep.). However, with the loss of the Drum Island colony in Charleston Harbor in 1988, there was a conspicuous lack of a medium or large colonies on the central coast. We found no difference in the spatial distribution of Great Egret colonies between survey years ($P = 1.0$).

Great Egrets were the most numerous of the fish-eating heron and egret species nesting in South Carolina. Approximate confidence limits for statewide nest estimates indicated that nesting increased from approximately 5,400 nests in 1988 and 1989 to 9,100 nesting pairs in 1996 (Figure 12). Average colony size increased from 89 nests in 1988 to 126 nests in 1996.

As with other wading bird species, the largest proportion of colonies were in the smallest size class (fewer than 30 nests). There was no difference in the proportion of colonies in size classes between survey years ($\chi^2 = 18.82$, $df = 15$, $P = 0.22$).

During our surveys, the spatial distribution of Great Egret colonies and the proportion of colonies in size classes did not differ. Nevertheless, the Great Egret nesting population increased significantly during our study from approximately 5,400 to 9,100 nesting pairs.

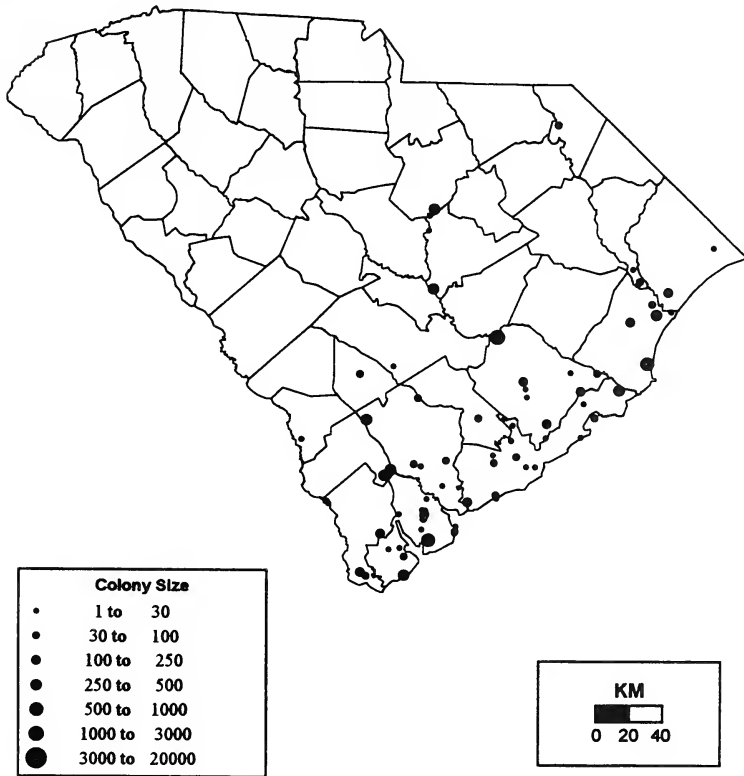


Figure 11. Great Egret nesting locations in South Carolina, 1996.

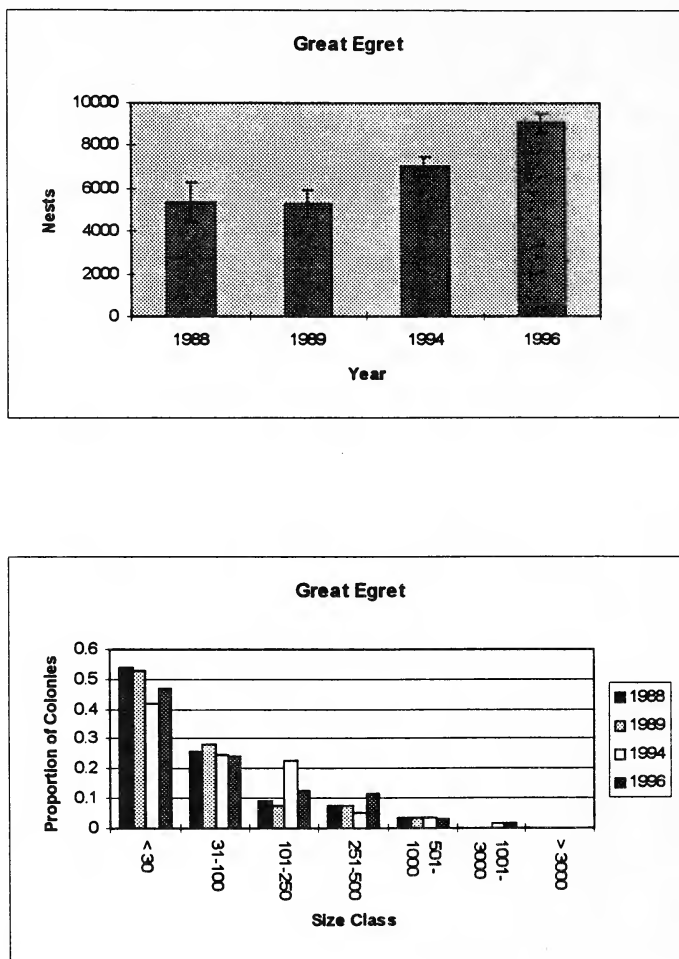


Figure 12. Great Egret nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

Snowy Egret

Overall, the distribution of Snowy Egret nesting was coastal, with the larger colonies located near the major estuary systems (Figure 13). A few Snowy Egrets nests, though, were found as far inland as Kershaw County. The lack of nesting north of Georgetown is probably due to the absence of large estuaries in this portion of the state. There was no difference in the spatial distribution of Snowy Egret colonies between survey years ($P = 0.57$).

Snowy Egrets were the most numerous small day-heron nesting in South Carolina during our study (Table 4). Minimum nest estimates increased by over 1,000 nests from 1988 - 1989 and then decreased to previous levels in 1994 and 1996 (Table 4). Aerial nest estimates which were included in 1988 statewide nest totals inflated confidence intervals, so it was difficult to evaluate trends in census data (Figure 14). We did, however, detect a slight decrease in nesting between the 1989 and 1994 surveys. Mean colony size was similar in 1988, 1994, and 1996 but nearly doubled in size during the 1989 nesting season. We found a significant difference in the proportion of colonies in size classes between survey years ($\chi^2 = 37.63$, $df = 12$, $P < 0.0001$). This difference appears to be due to the small number of nests in the <30 nest size class and a higher proportion of nests in the 501-1,000 nest class during 1989 (Figure 14).

Based on analysis of nesting trends, colony distribution and size class information, Snowy Egret populations fluctuated slightly but appeared stable at approximately 3,500 nesting pairs during our study.

Great Blue Heron

Great Blue Herons nested throughout the entire coastal plain in association with saline, brackish, and freshwater habitats (Figure 15). Over 50% of the annual Great Blue Heron nesting was located in three large colonies on lakes Marion and Moultrie. The remaining colonies were small and widely distributed. There was no difference in the spatial distribution of colonies between survey years ($P = 0.51$).

Great Blue Heron minimum nest estimates remained remarkably stable at approximately 2,500 nests during our study (Table 4). Despite relatively small approximate confidence limits for statewide nest estimates, we did not detect any differences in nesting attempts between survey years (Figure 16).

The number of colonies increased from 52 in 1988 to 110 in 1996. The increase in the number of nesting sites was partially due to the cumulative effects of our long-term survey effort, but also represents a real increase in the number of Great Blue Heron colonies. One possible reason for the increase in the number of colonies includes the destruction of nesting habitat due to

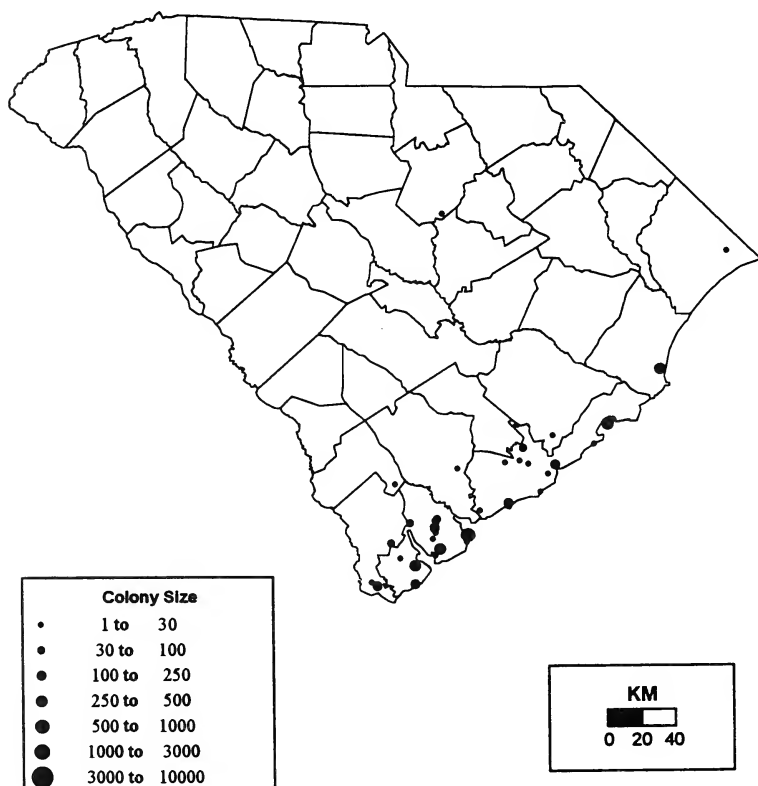


Figure 13. Snowy Egret nesting locations in South Carolina, 1996.

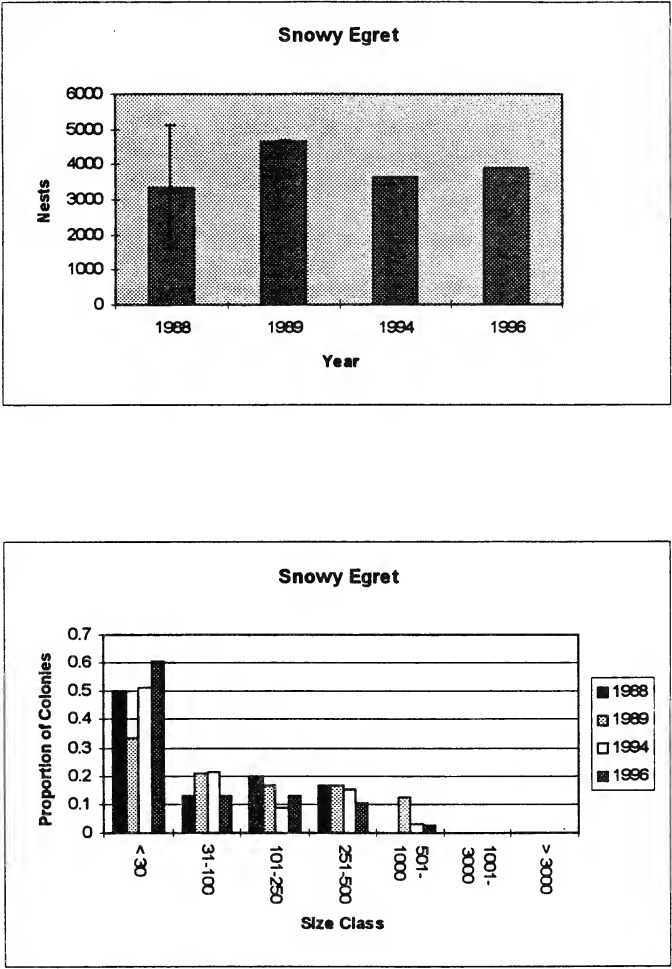


Figure 14. Snowy Egret nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

Hurricane Hugo in 1989. Although nesting habitat in historic colonies was not completely destroyed, many colonies were reduced in size and excess birds were forced to form new colonies.

Between 77 and 88% of Great Blue Heron colonies contained <30 nests (Figure 16). The largest colony contained 837 nests. Despite the increase in small colonies, there was no difference in the colony size class distributions between survey years ($\chi^2 = 11.37$, $df = 12$, $P = 0.50$).

Based on statewide nest estimates, South Carolina's Great Blue Heron population is stable at approximately 2,500 nesting pairs. The trend, however, toward more numerous small colonies may indicate a problem with the availability of nesting habitat and should be monitored more closely in the future.

Tricolored Heron

The nesting distribution of Tricolored Herons was similar to Snowy Egrets, with most colonies being located close to the coast. We did not find any nesting inland of Berkeley County (Figure 17). Most large colonies were associated with the major estuary systems. And we did not find any nesting north of Winyah Bay in Georgetown County. We found no difference in the spatial distribution of colonies between survey years ($P = 0.95$).

The dark coloration of Tricolored Herons and their tendency to nest in dense vegetation makes them virtually impossible to locate from aircraft. Although they are difficult to survey, they always nested in association with conspicuous (white-colored) species during our study. Therefore, our survey efficiency for locating Tricolored Heron colonies is probably equivalent to that of Great and Snowy egrets. Because all nests for this species were censused using a complete ground count, we used minimum nest counts to assess nesting trends (Figure 18). Minimum nest totals indicated a slight fluctuation (< 30% of total) in nesting from 1,736 to 2,412 nests (Table 4). The mean colony size appeared stable with the exception of 1989. Maximum colony sizes were similar to other heron and egret species. We detected a significant change in the proportion of colonies in size classes during our surveys ($\chi^2 = 39.85$, $df = 12$, $P < 0.0001$). This difference appears to be due to the larger proportion of colonies in the smallest size class (< 30 nests) and the corresponding lack of colonies in the middle size classes (31-500 nests) in 1996 (Figure 18).

As with Snowy Egrets, the Tricolored Heron nesting population fluctuated slightly during our study but appeared to be relatively stable at approximately 2,000 -2,400 nesting pairs.

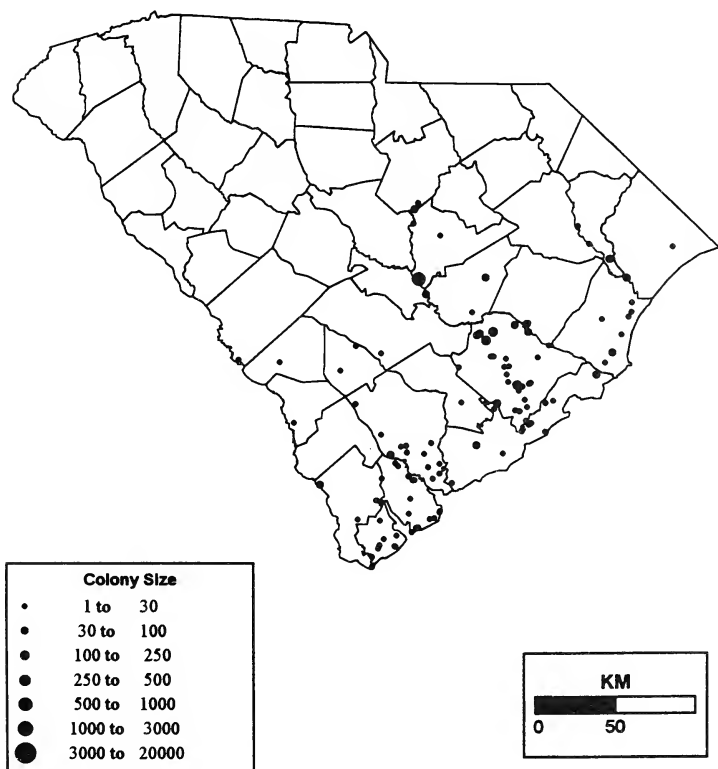


Figure 15. Great Blue Heron nesting locations in South Carolina, 1996.

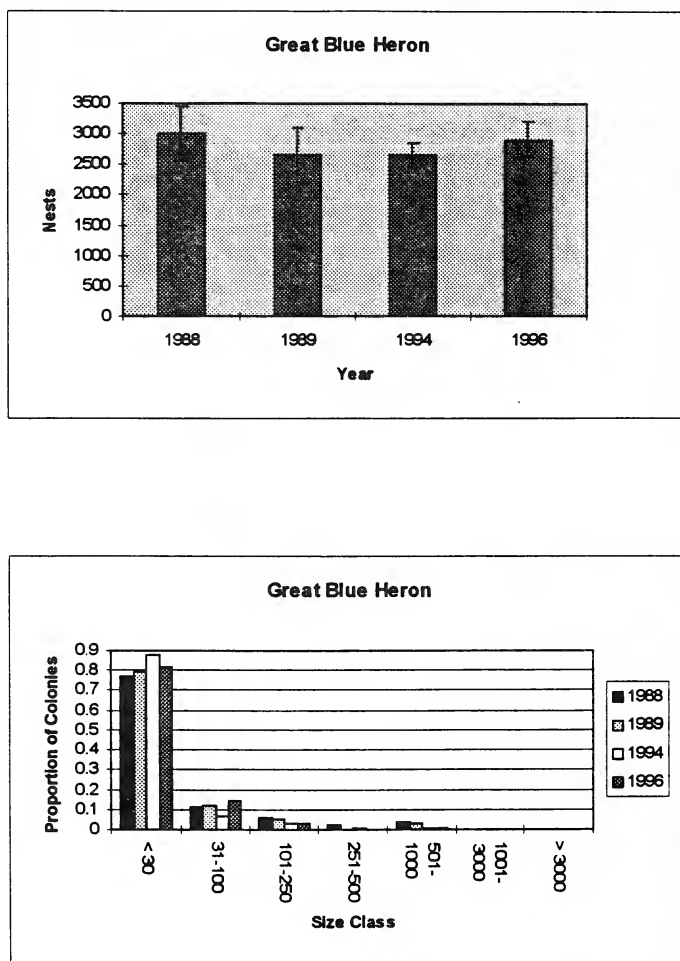


Figure 16. Great Blue Heron nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

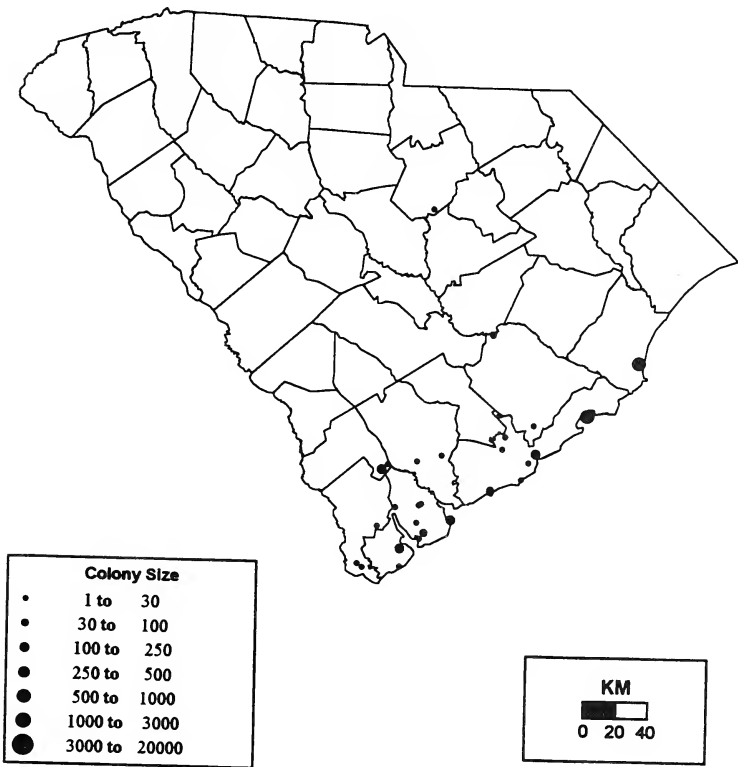


Figure 17. Tricolored Heron nesting locations in South Carolina, 1996.

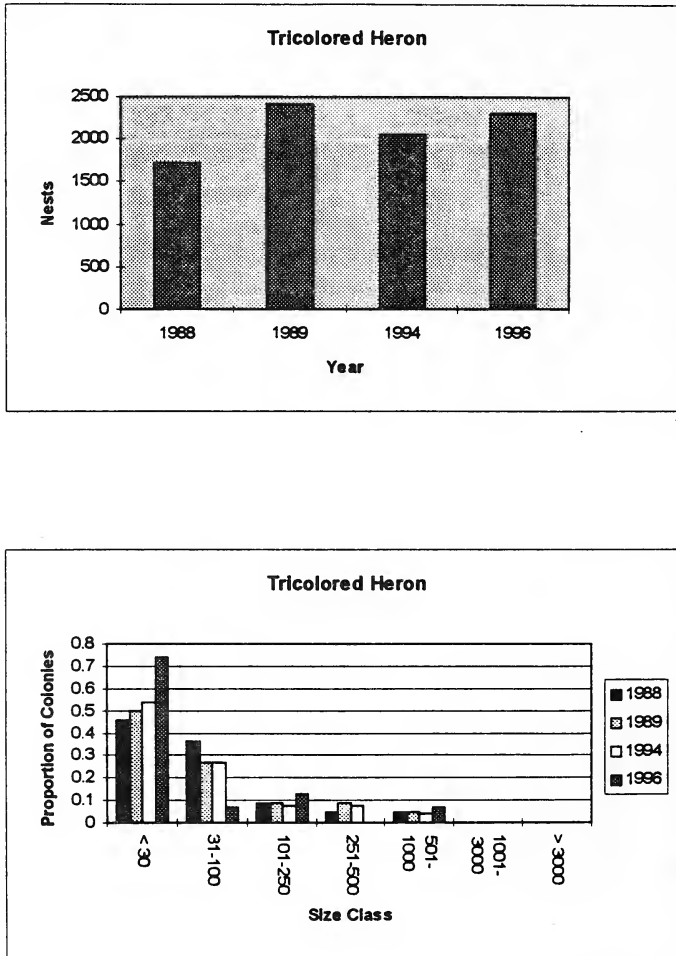


Figure 18. Tricolored Heron nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

Little Blue Heron

Little Blue Herons had a wide nesting distribution, but with the exception of Beaufort County, they were absent from the immediate coast (Figure 19). This distribution is probably a reflection of their preference for feeding in freshwater habitats (Post 1985). We found no difference in the spatial distribution of colonies between survey years ($P = 1.0$).

Based on minimum nest totals, the Little Blue Heron nesting population increased in size during our study. However, the low number of nests found in 1988 was due to incomplete surveys. As with Tricolored Herons, the dark coloration of these birds and their tendency to nest in dense vegetation makes them virtually impossible to locate from aircraft. Although Little Blue Herons often nest in association with other wading bird species, they also form colonies in which they are the only species present (S. C. Colonial Wading Bird Database 1996). Colonies containing exclusively Little Blue Herons were located from historic records and personal communications. Little Blue Heron nest totals must be viewed with caution because of the poor survey efficiency associated with this species.

Little Blue Heron nesting numbers appeared to be stable over the last 3 survey years (Table 4). However, wide confidence limits on statewide nest estimates make it difficult to assess nesting trends (Figure 20). Both mean and maximum colony sizes were small compared with other heron and egret species (Table 4). No large colonies (those with more than 466 nests) were found during our surveys. We found a significant difference in the proportion of colonies in size classes between survey years ($\chi^2 = 38.32$, $df = 9$, $P < 0.0001$).

Historic records indicate that Little Blue Herons were the dominant heron in South Carolina colonies during the 1930's (Ogden 1978). Although no longer the most common wading bird on the coast, our data suggests that the Little Blue Heron nesting population is stable at between 2,000 and 2,600 nesting pairs. However, development of more efficient survey techniques will be necessary to increase our confidence in the accuracy of nest estimates.

Anhinga

Anhingas were widely distributed, nesting throughout the coastal plain of South Carolina (Figure 21). Nests were located in colonies less than 100 m from the Atlantic Ocean and as far inland as Aiken, Kershaw, and Marlboro counties.

Anhinga minimum nest totals increased during the study, however, the average colony size remained approximately the same (Table 4). Although minimum nest estimates indicated an increase in nesting attempts from 1989 to 1996, this was more likely a result of the cumulative effect of 3 years of

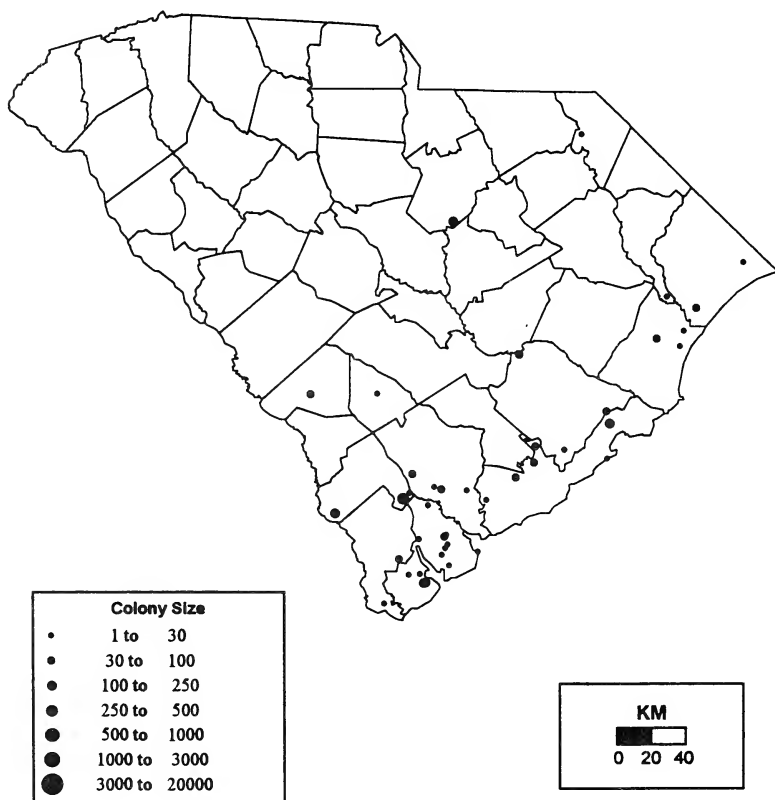


Figure 19. Little Blue Heron nesting locations in South Carolina, 1996.

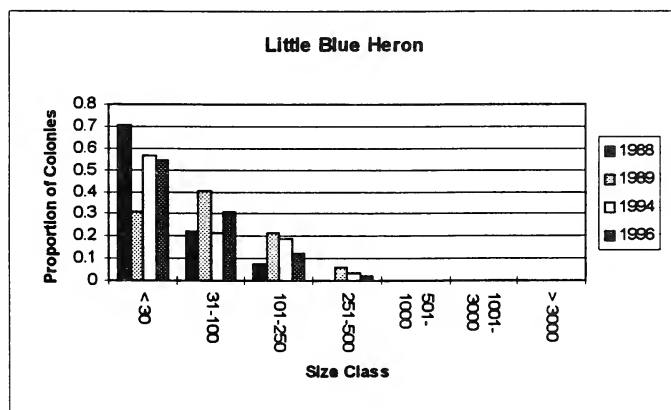
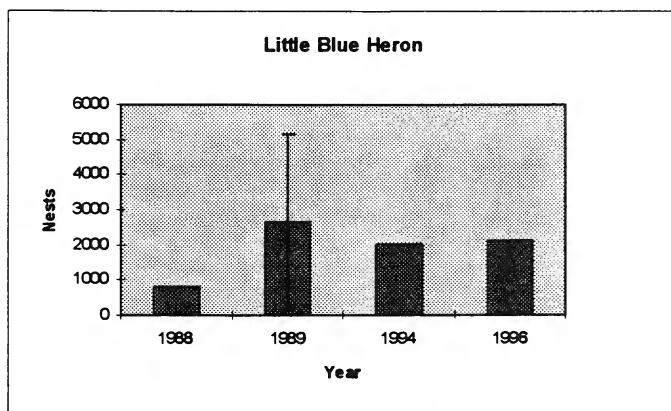


Figure 20. Little Blue Heron nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

surveying rather than a real increase in nesting. The average and maximum number of nests found in a single colony (241 nests) were small in comparison with other waterbird species. Over 70% of Anhinga colonies contained fewer than 30 nests (Figure 22). There was no difference in the colony size class distribution between survey years ($\chi^2 = 10.46$, $df = 6$, $P = 0.11$). Anhingas were often found nesting on the periphery of large mixed-species wading bird colonies. With the exception of the Potato Ferry colony in Marion County, Anhingas were never the dominant species in a colony.

we were able to gather valuable information on several aspects of Anhinga nesting in South Carolina, but incomplete surveys preclude the assessment of trends for this species.

Wood Stork

Wood Storks were found to nest in only 3 southern counties (Hampton, Colleton, and Charleston) during the 1988 and 1989 surveys. By 1996, we found two more colonies, on the Santee River in Charleston and Georgetown Counties (Figure 23). Although the distribution of colonies is coastal, nesting sites are generally associated with fresh and brackish feeding habitats. We found no difference in the spatial distribution of nesting colonies between years ($P = 0.74$). This result must be viewed with caution because of the small sample of colonies used in the analysis.

Wood Storks first nested in South Carolina in 1981 (S.C. Colonial Waterbird Database 1996). From 1988 to 1996, nesting totals increased from 179 nests in 3 colonies to 953 nests in 7 colonies (Table 4). Average colony size increased from 60 to 102 nests. As expected with an expanding population, we found a difference in the proportion of colonies in size classes between years ($\chi^2 = 145.93$, $df = 9$, $P < 0.0001$). In 1996, over half of the Wood Stork colonies were in the 101 - 250 nest size class (Figure 24).

Based on minimum nest counts, the Wood Stork nesting population increased from less than 200 to over 950 nesting pairs. In addition, they expanded their nesting range northward to the South Santee River near Georgetown.

Double-crested Cormorant

Double-crested Cormorants were found to have a limited nesting distribution in South Carolina. With one exception, all colonies were located on lakes Marion and Moultrie or in the Cooper River Drainage (Figure 25). In 1994, cormorants expanded their range to the south, nesting in a large-mixed species colony on Hilton Head Island.

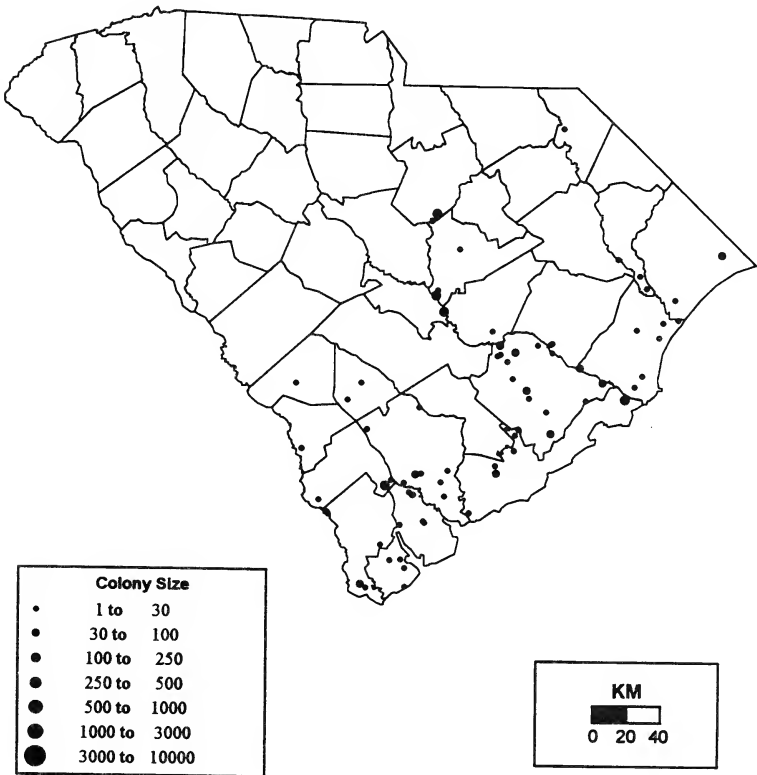


Figure 21. Anhinga nesting locations in South Carolina, 1996.

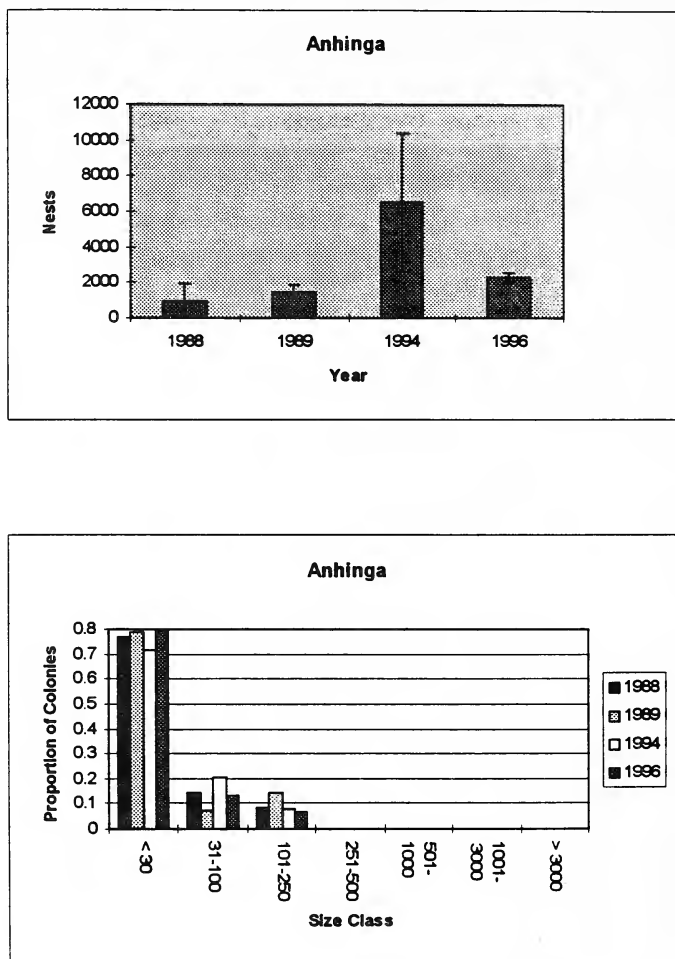


Figure 22. Anhinga nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

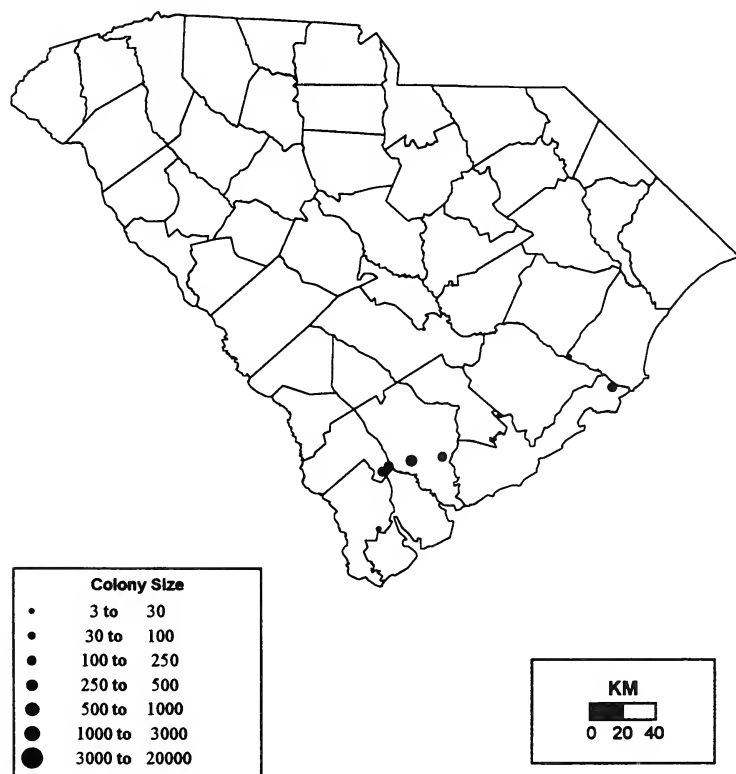


Figure 23. Wood Stork nesting locations in South Carolina, 1996.

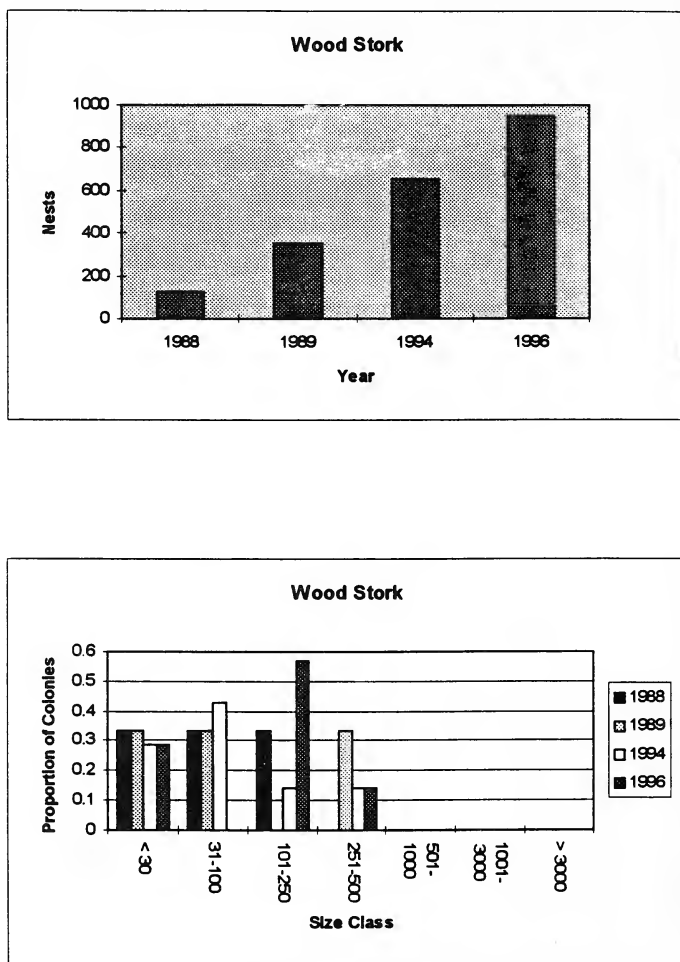


Figure 24. Wood Stork nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

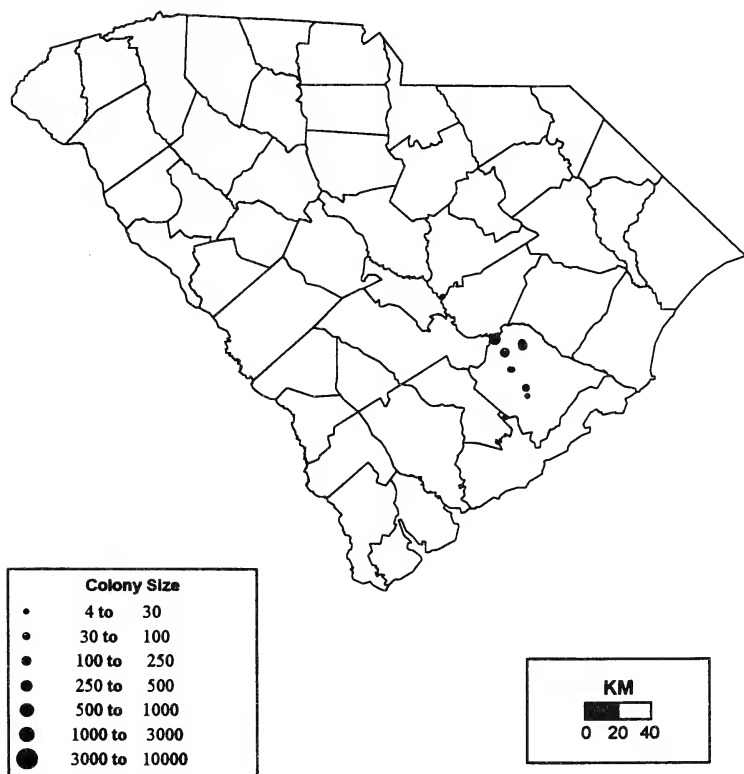


Figure 25. Double-crested Cormorant nesting locations in South Carolina, 1996.

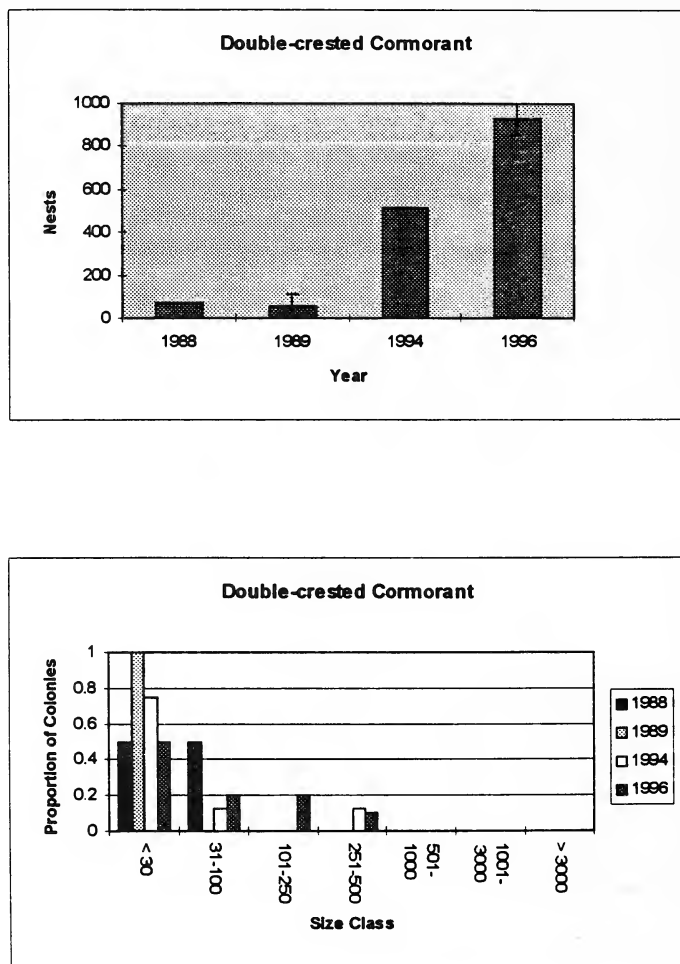


Figure 26. Double-crested Cormorant nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

Double-crested Cormorants first nested in South Carolina in 1985 (Post 1988). During our study, nesting increased from 2 colonies containing 72 nests to 10 colonies containing 895 nests (Table 4). Despite their dark coloration, Double-crested Cormorants are relatively easy to locate from the aircraft due to their tendency to nest in the top of vegetation. Approximate confidence limits for statewide nest estimates indicated an increase in nesting in 1994 and 1996 (Figure 26). Overall, the average colony size has increased from 14 to 90 nests, with the largest colony in 1996 containing 447 nests. We found a significant difference in the proportion of colonies in size classes between survey years ($\chi^2 = 173.66$, $df = 9$, $P < 0.0001$). This difference was probably due to a higher proportion of colonies in the larger size classes in 1994 and 1996. The proportion of colonies containing fewer than 30 nests ranged from 50 to 100% during our surveys (Figure 26).

Cormorants nested in large single-species colonies as well as in association with other wading bird species.

Data from our surveys suggests that Double-crested Cormorants are slowly expanding both their nesting population and geographical range in South Carolina.

Yellow-crowned Night-Heron

Yellow-crowned Night-Herons are semi-colonial and often nest on the periphery of colonies or singly in river swamps. Consequently, our colony map and minimum nest estimates represent a small fraction of the statewide nesting distribution and totals (Figure 27, Table 4). One point of interest is a colony in Sparkleberry Swamp. It contained 973 Yellow-crowned Night-Heron nests in 1996 and may be the largest colony on the Atlantic coast.

Black-crowned Night-Heron

The distribution of Black-crowned Night-Heron colonies was primarily coastal, indicating this species' preference for estuarine wetland habitats (Figure 28). Most nests were found in the 6 coastal counties, but a few were found in colonies as far inland as Kershaw and Marlboro counties.

Because no estimation techniques were used to count nests, we used minimum nest counts to assess population trends. Minimum nest totals increased in 1989 and then decreased slightly during 1994 and 1996 (Table 4). Because Black-crowned Night-Herons are semicolonial, changes in statewide nest totals may be a result of poor survey efficiency rather than real changes in the nesting effort. The average colony size was smaller than all other species in the study. More than 80% of Black-crowned Night-Heron colonies

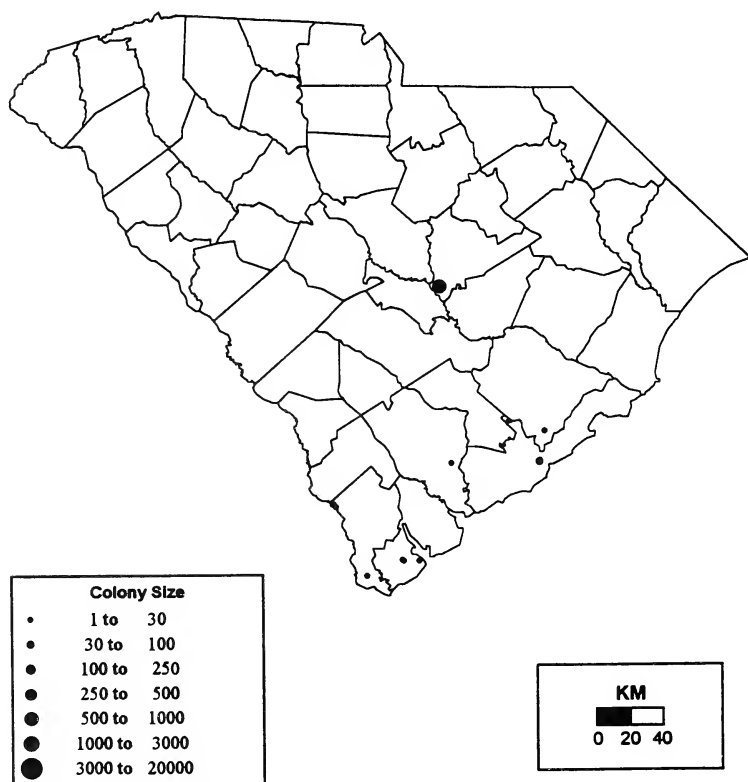


Figure 27. Yellow-crowned Night-Heron nesting locations in South Carolina, 1996.

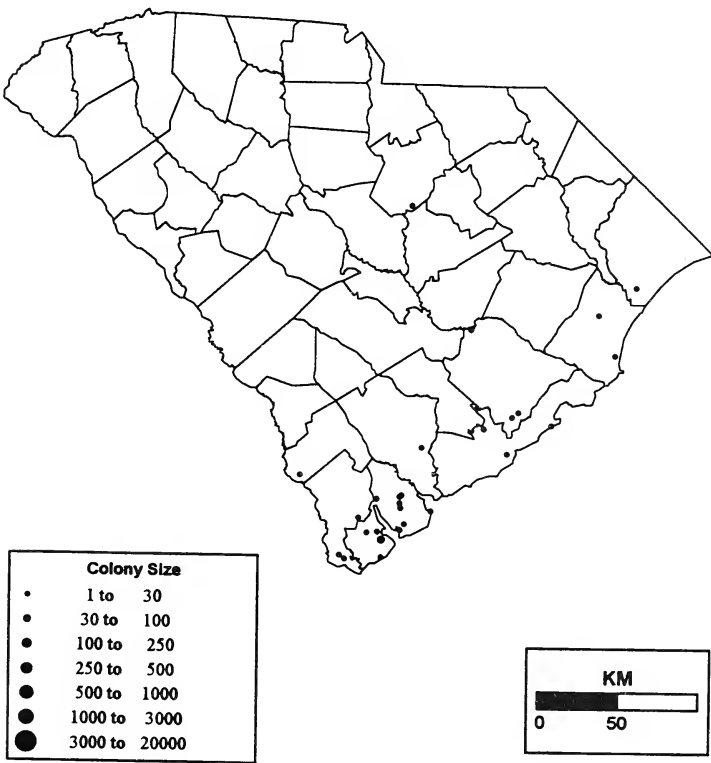


Figure 28. Black-crowned Night-Heron nesting locations in South Carolina, 1996.

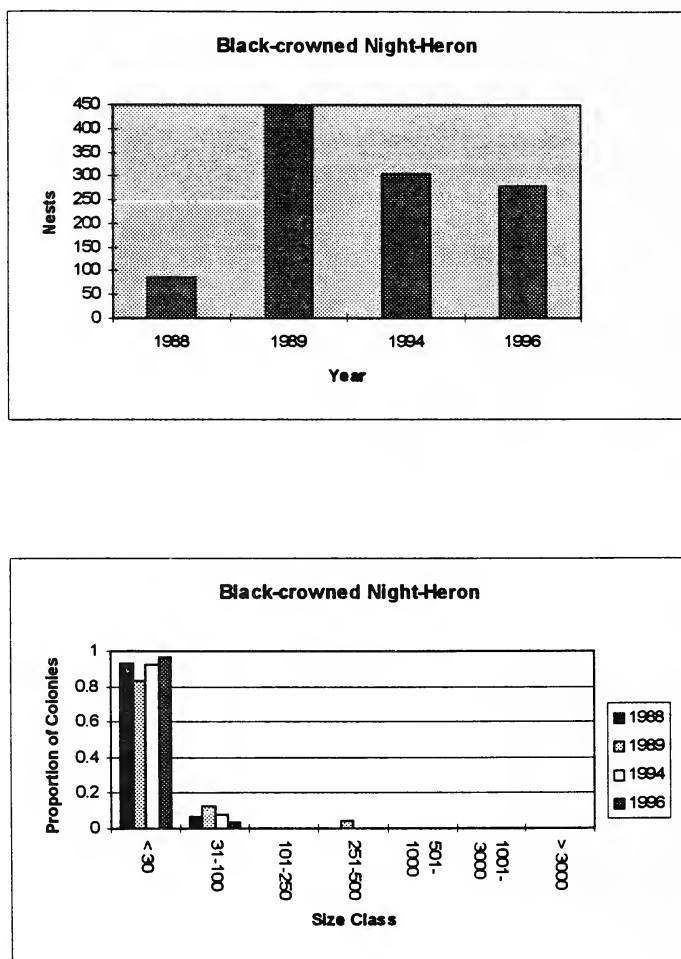


Figure 29. Black-crowned Night-Heron nesting trends and the relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

contained fewer than 30 nests (Figure 29). We found a significant difference in the colony size class distribution between survey years ($\chi^2 = 19.06$, $df = 6$, $P = 0.004$). This difference appeared to be at least partially a result of the addition of several colonies in the 251-500 nest size class in 1989.

Black-crowned Night-Herons nested in association with almost all other wading bird species in large colonies. They also nested, though, in small isolated colonies in which they were the dominant species.

As with Anhingas, incomplete surveys and the tendency of these birds to nest in small isolated colonies precludes analysis of nesting trends.

Glossy Ibis

Compared to other species, Glossy Ibises nested in relatively few colonies, all of which were located within 2 km of the coastline (Figure 30). Colonies were located in association with 3 large estuary systems including: Charleston Harbor, Bull's Bay, and Winyah Bay. In 1994, their nesting range decreased slightly with the loss of a nesting site in the Charleston Harbor area.

Glossy Ibises were first recorded nesting in South Carolina in 1947 (Sprunt and Chamberlain 1977). Glossy Ibis nesting attempts increased during each year of the study, but the relative numbers nesting in South Carolina were low compared with other wading bird species. Average colony size increased from 32 in 1988 to 179 in 1996. We found a significant difference in the proportion of colonies in size classes between survey years ($\chi^2 = 306.18$, $df = 9$, $P < 0.0001$) caused by a trend toward a larger proportion of colonies in the medium (101-250 nests) size class (Figure 31). Sixty-five to 75% of the colonies in a given year contained fewer than 30 nests.

Based on analysis of nesting trends, colony distribution and size class information, the Glossy Ibis nesting population appears to be stable or slightly increasing at approximately 250-350 nesting pairs.

Relative Importance Index

The top 20 ranked colonies in the 1989, 1994, and 1996 nesting seasons were similar, with seven colonies being common to all three lists (Table 5). The top 10 colonies in 1994 had been active an average of 29.1 years. However, this number was inflated slightly by the Washo reserve colony, which has been continuously active since 1823 (Sprunt and Chamberlain 1977, S.C. Colonial Waterbird Database 1996). Fourteen of the top 20 ranked colonies in 1994 and 1996 were in impounded wetlands with stable water conditions.

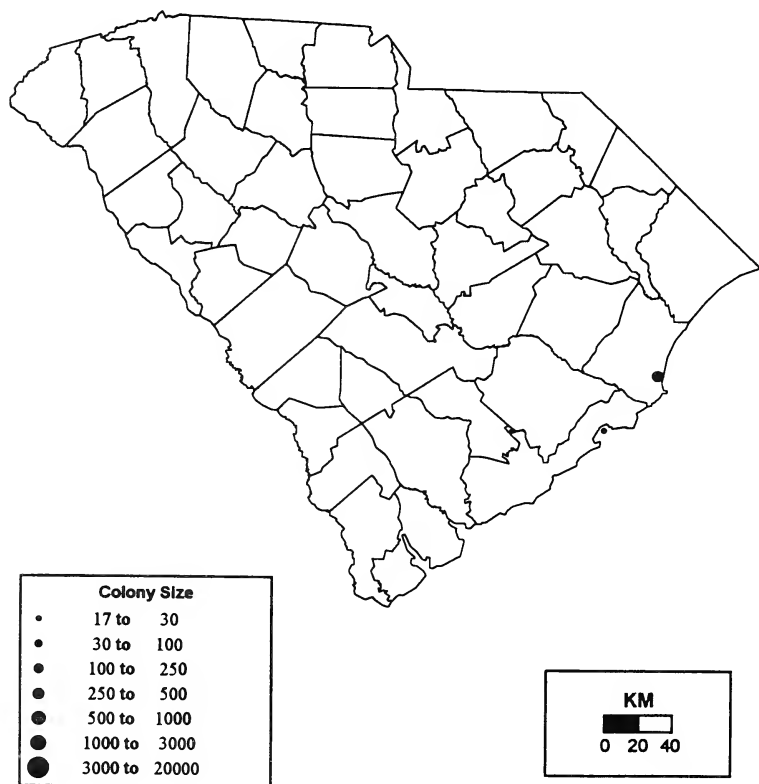


Figure 30. Glossy Ibis nesting locations in South Carolina, 1996.

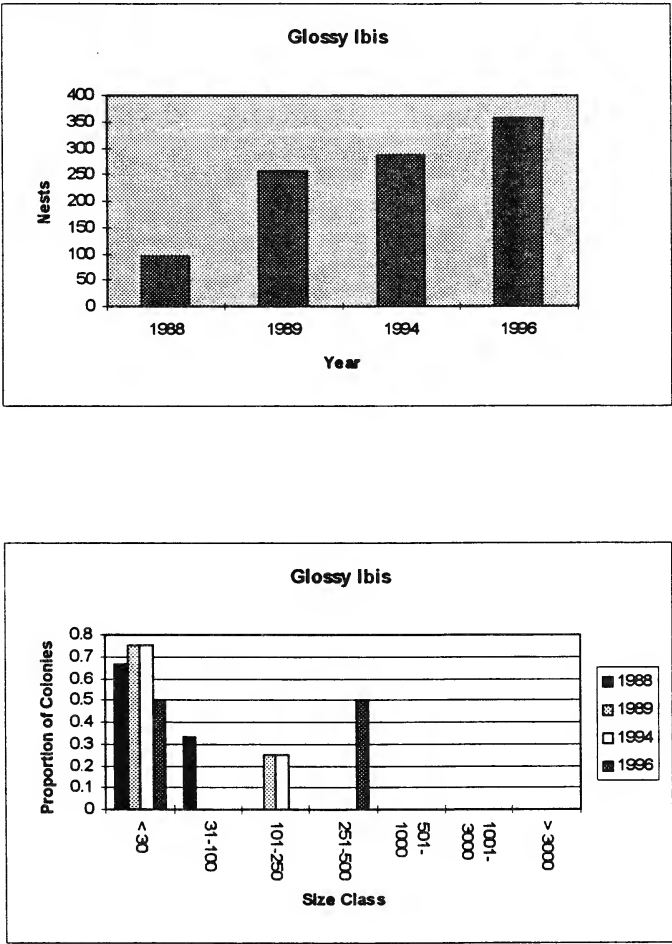


Figure 31. Glossy Ibis nesting trends and relative proportions of colonies in each of 7 size classes in South Carolina, 1988, 1989, 1994, and 1996.

Table 5. Top 20 ranked wading bird colonies in South Carolina, 1989, 1994, and 1996 (for data see Appendix A.).

1989				1994				1996			
Site No.	Site Name	Index	Site No.	Site Name	Index	Site No.	Site Name	Index	Site No.	Site Name	Index
1 SC-CO-014	Jacksonboro	45.89	1 SC-BE-002	Bird Is., L. Marion	43.88	1 SC-HA-005	Buckfield	46.13			
2 SC-JA-011	Two Bridge Swamp	45.44	2 SC-BU-004	Colleton Neck	43.29	2 SC-KE-001	Boykin Mill Pond	44.78			
3 SC-GO-003	Pumpkinseed Is.	43.71	3 SC-BU-013	St. Helena Is.	43.29	3 SC-BU-038	Pinckney Is., Osprey	43.88			
4 SC-CH-053	Drum Is. IV, Shipyard	43.63	4 SC-KE-001	Boykin Mill Pond	42.43	4 SC-CO-014	Jacksonboro	43.30			
5 SC-BU-013	St. Helena Is.	43.29	5 SC-GO-003	Pumpkinseed Is.	41.67	5 SC-BE-002	Bird Is., L. Marion	42.71			
6 SC-BU-032	Sea Pines Ptn.	43.29	6 SC-BM-001	Olar	41.40	6 SC-BU-013	St. Helena Is.	42.17			
7 SC-BE-002	Bird Is., L. Marion	42.71	7 SC-HA-005	Buckfield	40.67	7 SC-BU-048	Harbor Is.	42.17			
8 SC-MA-003	Podato Ferry	41.83	8 SC-CO-018	Whitehall II	39.50	8 SC-HO-004	Bear Grass	41.80			
9 SC-KE-001	Boykin Mill Pond	41.50	9 SC-CO-003	Ritter	38.83	9 SC-JA-005	Whig Swamp	41.67			
10 SC-BM-001	Olar	40.75	10 SC-CH-001	Washo Reserve	38.50	10 SC-GO-003	Pumpkinseed Is.	41.67			
11 SC-BU-029	Rose Hill Ptn.	37.29	11 SC-BU-032	Sea Pines Ptn.	37.57	11 SC-CH-007	Marsh Is.	41.00			
12 SC-BU-038	Pinckney Is., Osprey	37.17	12 SC-CH-015	Magnolia Gardens	37.29	12 SC-SU-001	Sparkleberry Sw.	40.00			
13 SC-CO-018	Whitehall II	37.00	13 SC-MB-001	Mariboro	37.17	13 SC-HA-001	Yemassee I	36.83			
14 SC-CH-054	Cape Is., Pond	36.80	14 SC-BU-048	Harbor Island	36.80	14 SC-CO-018	White Hall II	36.50			
15 SC-BU-027	Pinckney Is., Ibis Pd.	36.17	15 SC-MA-004	Russ Creek	36.67	15 SC-CH-001	Washo Res.	36.50			
16 SC-BU-034	Wilkins I	36.17	16 SC-BM-002	Lemon Creek	36.50	16 SC-GO-023	Sandy Is.	36.50			
17 SC-CH-001	Washo Reserve	36.00	17 SC-CH-040	Tea Farm	36.50	17 SC-BU-059	Pinckney Is., W. Sork	37.67			
18 SC-SU-001	Sparkleberry Swamp	36.00	18 SC-CO-014	Jacksonboro	36.50	18 SC-JA-016	Monkey John Sw	37.33			
19 SC-CH-007	Marsh Island	35.20	19 SC-BU-029	Rose Hill Ptn.	36.17	19 SC-BU-064	Brickyard Pt. II	37.29			
20 SC-BE-017	Pipeline	35.00	20 SC-SU-001	Sparkleberry Swp	36.00	21 SC-JA-015	Magnolia Gardens	37.29			
							Turnbridge Ptn.	37.29			

CONCLUSIONS

For most species, wading bird populations fluctuated slightly but were generally stable or increasing. White Ibis was the only species in which we found large decreases in nesting population.

Overall, nesting was concentrated in the 6 coastal counties. Both Wood Storks and Double-crested Cormorants significantly expanded their nesting range and population. Several species, including Anhingas, Black-crowned and Yellow-crowned Night-Herons, and Little Blue Herons were difficult to locate from the aircraft because of cryptic coloration and a tendency to nest in dense vegetation. Due to poor survey efficiency, we were unable to assess nesting trends for these species. White Ibis populations were highly variable between years. Due to their nomadic nature (Frederick *et al.* 1996), it will be necessary to examine annual nesting patterns on a regional scale to determine their status.

Although historic records provide little quantitative information concerning the size of wading bird populations, it may be useful to use the relationship between wading bird nesting and wetland area to speculate on the relationship between current and historic nesting populations. Heron and egret nesting has been found to be grossly correlated with total wetland area on the Atlantic Coast (Custer and Osborn 1977) and in South Carolina (Dodd and Murphy in prep.). Because South Carolina has lost approximately 27% of its wetlands (Dahl 1990), we can speculate that current wading bird nesting represents approximately 73% of historic levels. The majority of recent wetland loss in South Carolina has been primarily forested paulustrine wetlands (Hefner *et al.* 1994). Species which are more dependent on estuarine habitats, such as Snowy Egrets, Tricolored Herons, and Black-crowned Night-Herons, were probably minimally effected by wetland loss. For these species, historic and current nesting populations are probably comparable. Species more dependent on freshwater habitats, such as Little Blue Herons and Yellow-crowned Night-Herons, have probably shown decreases which correspond more directly with overall wetland loss. Finally, ubiquitous species which are widely distributed and utilize all available wetland habitats have probably shown slight decreases in nesting populations from historic levels because only a portion of their range has been affected.

Overall, we are cautiously optimistic concerning the health of South Carolina's wading bird nesting populations. In all likelihood, we are currently supporting a large portion of the historic nesting population. With careful management, we should be able to maintain these populations indefinitely.

Appendix A. Variables and scores used to rank wading bird colonies in South Carolina, 1989, 1994, and 1996 (from Runde 1991).

Variables and categories	Points
Colony Size Class	
< 100	0
100-499	4
500-1000	6
> 1000	10
Species Richness	1-13
Biological Score^a	
Anhinga	17
Black-crowned Night-Heron	13
Cattle Egret	8
Double-crested Cormorant	11
Glossy Ibis	15
Great Blue Heron	15
Great Egret	19
Little Blue Heron	23
Snowy Egret	17
Tricolored Heron	17
White Ibis	13
Wood Stork	23
Yellow-crowned Night-Heron	21
Colony History	
Colony located in previous survey	10
Colony located in present survey	5

^a Millsap et al. (1990). Score is average of species present

Appendix B. Minimum and adjusted statewide nest estimates for South Carolina wading birds, 1988, 1989, 1994 and 1995, (excluding point, perimeter, and aerial photo counts)

Species	1988				1989				1994				1995			
	Min. est.	Adj. est.	Conf. limit	% ^c	Min. est.	Adj. est.	Conf. limit	%	Min. est.	Adj. est.	Conf. limit	%	Min. est.	Adj. est.	Conf. limit	%
Anhinga	830	909	±1,056	232	933	1,470	±360	49	1,397	6,477	±3,876	120	1,875	2,272	±250	22
Black-crowned night-heron	85				449				305				279			
Cattle egret	6,540	7,479	±841	17	18,421	19,889	±6,561	66	15,905				11,035	12,364	±2,207	36
Double-crested cormorant	72				58	60	±53	177	515	518	±1	0.4	895	927	±73	16
Glossy ibis	97				256				288				358			
Great egret	4,796	5,360	±921	34	5,111	5,283	±654	25	6,980	7,016	±458	13	8,798	9,088	±453	10
Great blue heron	2,777	2,965	±445	30	2,506	2,664	±450	34	2,547	2,659	±190	14	2,655	2,913	±283	19
Little blue heron	782				2,611	2,656	±2,468	188	2,048				2,125			
Snowy egret	3,183	3,352	±1,740	104	4,606	4,664	±11	0.5	3,630				3,883			
Tricolored heron	1,723				2,412				2,050				2,312			
White ibis	9,079				20,798				9,476				16,402			
Wood stork	129				355				655				953			
Yellow-crowned night-heron	0				35				507				973			

a Minimum number of nests adjusted using regression equations for technique or a combination of techniques used in statewide nest total.

b 95% confidence limits for statewide nest estimate (Dodd and Murphy 1995).

c Approximates the % change in nesting population necessary to detect change in nesting population (Dodd and Murphy 1995).

d Although estimation techniques were used to obtain nesting total, insufficient samples were available to establish relationship between tech. and ground counts. Minimum number of nests is reported but represents an undercount of total nests.

Acknowledgments

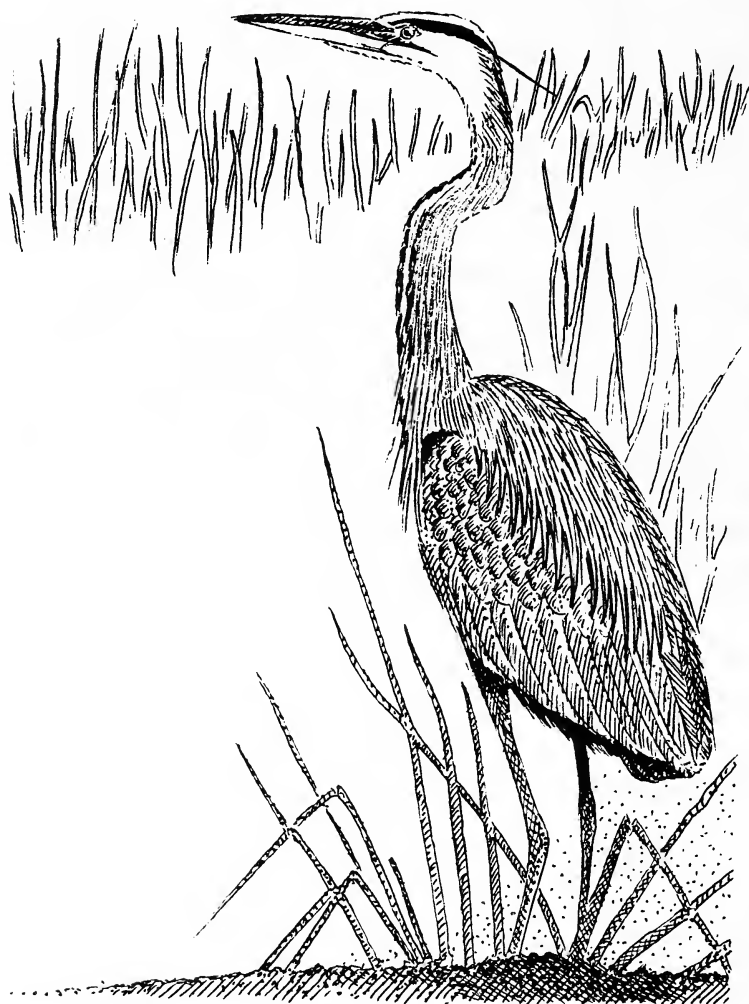
We express our deep appreciation to countless individuals who provided information on colony locations over the years. We are indebted to R. Boettcher, T. O. Bowen, J. C. Coker, S. L. Dodd, E. G. Dunlavy, C. Koeppel, M. Milligan, L. A. Savereno, B. Shaw, and M. A. Whitehead for providing field assistance. In addition, we are grateful for occasional field assistance from K. Bildstein and graduate students, J. E. Cely, J. Dozier, C. P. Hope, W. Post, W. E. Rhodes, T. J. Savereno, M. D. Spinks, A. W. Whitehead, M. M. Wilkinson, and P. M. Wilkinson. J. C. Coker provided technical support for all phases of the study, and S. R. Murphy assisted in aerial surveys. S.C.D.N.R. pilots A. Poston, M. E. Lucas, J. Gibson, C. A. McIntosh, and A. Burgess professionally piloted survey flights. S. L. Dodd provided constructive comments on earlier drafts of the manuscript. Finally, we are indebted to the numerous landowners and managers who graciously allowed access to their property to enable us to conduct our censuses.

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DKalbach '97

Nesting Ecology of Great Blue Herons At Three Previously Unreported Sites in Wake, Franklin, and Johnston Counties, North Carolina

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On 20 March 1996 Alderink informed Potter that the Great Blue Herons (*Ardea herodias*) had returned to their nesting site on Buffalo Creek at US 64-Business, about a half mile (1 km) west of Wendell, Wake County, N.C. He indicated that he had seen herons at the site during the past two nesting seasons. Subsequent field work by Potter and Barkley revealed a second heronry on Moccasin Creek. Moccasin Creek marks the Franklin-Wake county line at the Zebulon Country Club. In the spring of 1996, Alderink, Potter, and Barkley did not know that Brown was observing activities at a third heronry situated on Little River in northern Johnston County. All three sites are within 5.5 miles (9 km) of the junction of NC 96 and NC 97 within the town of Zebulon in eastern Wake County (Fig. 1). All three streams drain into the Neuse River.

Although Potter had seen Great Blue Herons, usually single birds, in eastern Wake County and adjacent Franklin County on numerous occasions between late March and late June during the previous 22 years and suspected local breeding, she never found a nest before 1996.

During the 1975 and 1976 breeding seasons, Soots and Parnell (1979) made an aerial survey of inland heronries in the North Carolina coastal plain east of Interstate 95. They found no heronries along the Neuse River (which drains most of Wake County) or the Tar River (which drains most of Franklin County). The inland heronries closest to eastern Wake County were at Goshen Creek [Swamp] in northeastern Duplin County and at the Roanoke River along the Halifax-Northampton county line. Goshen Creek flows into the Northeast



Fig. 1. Map shows eastern Wake County and adjacent portions of Franklin, Nash, and Johnston counties. Points of particular interest are the heronry on Buffalo Creek (A), the heronry on Little River (B), the heronry on Moccasin Creek (C), the entrance to the Zebulon Country Club (D), and the Wendell Park (E). Hatching in the upper left corner of the map indicates the approximate boundaries of the Mitchell Mill Natural Area. North is toward the top of the map.

Cape Fear River. Measured in a straight line, those two heronries are approximately 55 to 60 miles (90 to 95 km) from the Wendell-Zebulon area of Wake County.

The inland heronries were surveyed in 1996, with coverage again confined to the area east of I-95, according to David H. Allen, Coastal Non-game Project Leader, N.C. Wildlife Resources Commission. Allen (personal communication) stated that his agency has obtained no evidence of Great Blue Herons breeding at any of the major reservoirs in the Raleigh area, including Jordan and Falls of the Neuse.

Buffalo Creek Heronry

Buffalo Creek rises in eastern Wake County and flows southeast into Johnston County, where it is impounded to form Wendell Lake, and joins Little River north of Micro and west of Beulah town. Little River is a tributary of the Neuse River.

The Buffalo Creek heronry is downstream from Robertsons Pond, which is noted for its stand of Bald Cypress (*Taxodium distichum*). When Jesse Perry, N.C. State Museum of Natural Sciences, heard about the heronry on Buffalo Creek, he told Potter that, during a springtime canoe trip several years ago, he saw what appeared to be abandoned Great Blue Heron nests in the headwaters of Robertsons Pond.

Cypress trees occur along Buffalo Creek all the way from Robertsons Pond to the heronry at US 64-Business and farther downstream at least to Poole Road, 2.6 miles (4 km) south of the heronry. The cause of the extensive flooding of bottomland woods at the nesting site and on the downstream side of US 64-Business has not been determined. Because there is no known manmade dam in the area, the authors assume that a dam constructed by Beavers (*Castor canadensis*) is the cause of the flooding and subsequent tree mortality that created conditions suitable for establishment of the heronry.

In the late afternoon of 20 March 1996, Potter and Alderink visited the Buffalo Creek site and saw three nests. One adult was in the vicinity of the colony.

On 13 April 1996 Potter and Barkley carefully surveyed the Buffalo Creek heronry, using binoculars and a 30X telescope. They located 10 nests. An adult was standing on one nest, and incubating birds were sitting low in seven nests. Two nests were unoccupied.

On 27 April, eight of the ten nests were still occupied, but the status of the two lowest nests could not be determined because of dense foliage. Two nests had well-feathered young, one had downy young, one had a standing adult

feeding chicks too small to raise their heads above the rim of the nest, and two had adults sitting high on the nest as if brooding chicks.

Young in eight nests at Buffalo Creek were in various stages of development on 4 May. The two most advanced broods had feathers on the crown beginning to lie flat and cover part of the nape, which showed no remnants of down. Those birds appeared to have hatched at least a week earlier than the largest young seen at Moccasin Creek on 4 May.

Because of heavy traffic on the highway and thick foliage obscuring some nests, Potter and Barkley decided to concentrate on observing the heronry on Moccasin Creek for the duration of the nesting season. No serious attempt was made to locate additional heron nesting sites along Buffalo Creek.

Little River Heronry

Little River rises in the vicinity of Moores Pond in northeast Franklin County and flows southeast through eastern Wake County and central Johnston County to join the Neuse just west of Goldsboro in Wayne County. There are three manmade dams on Little River in eastern Wake County: Mitchell Mill, now within the Mitchell Mill Natural Area; the reservoir at the Zebulon Water Plant on the north side of NC 97; and Tarpley Mill on the south side of US 64-Business between Wendell and Zebulon. Extensive flooding and numerous standing dead trees can be seen along Little River from US 64. Potter and Barkley found abundant evidence of additional beaver activity along Little River and many of its tributaries in Wake County between US 64 and the north side of US 401.

During the 1994 breeding season, Brown found six Great Blue Heron nests in a beaver pond about 2,400 feet (740 m) upstream from the Mudham Road bridge across Little River in northern Johnston County. The distance given represents the run of the stream. The straight-line distance, which cuts across a peninsula of high ground, is approximately half as far. Brown counted six occupied nests at Little River in 1995 and again in 1996.

Moccasin Creek Heronry

Moccasin Creek rises in southwest Franklin County and flows southeast on the Franklin-Wake, Johnston-Nash, and Johnston-Wilson county lines until it joins Turkey Creek to form Contentnea Creek, which was impounded to form Buckhorn Reservoir. Below the reservoir Contentnea Creek flows southeastward into the Neuse River southeast of Grifton.

The Moccasin Creek area offers water birds an array of manmade impoundments and ponds built by Beavers. The largest body of open water along the creek is Bunn Lake, a Y-shaped impoundment 1.3 miles (2 km)

long. A former mill pond, the lake was reimponded and enlarged about 1966. Downstream from Bunn Lake is Taylors Mill Pond, which was formed before the Civil War and is approximately a half mile (0.8 km) in length. Local sportsmen report extensive beaver activity along the creek between the two major impoundments (D. Mark Wilson, personal communication).

Above Bunn Lake, Moccasin Creek has been flooded by a series of beaver ponds stretching from the downstream side of the Old US 64 bridge northward to the swimming pool at the Zebulon Country Club. The golf course lies on both sides of Pearces Road about 4.5 miles (7 km) north of Zebulon.

Garland Price, head greens-keeper for the Zebulon Country Club and a lifetime local resident, reports that the first beaver pond known on Moccasin Creek in modern times was built in 1953 at the headwaters on the Percy Gay farm. By 1959 Beavers had moved downstream to the Henry K. Baker farm, where a manmade pond lies on the north side of Fowler-Henry Baker Road and a beaver pond lies immediately downstream on the south side of the road.

In 1963, while the golf course was under construction, Beavers built two small dams, one near the present site of the swimming pool and another about 0.5 mile (0.8 km) downstream, just below a large rock outcrop known locally as the Buzzard Rocks.

In 1967 Beavers constructed a major dam that backed water up to the 1963 dam at the swimming pool and to the golf-cart path between the No. 17 green and the No. 18 tee. The dam at the Buzzard Rocks was raised gradually to create a large pond that completely flooded the creek bed upstream to the 1967 dam (Price, personal communication). As recently as the spring of 1974 the swampy land at the base of the Buzzard Rocks remained heavily wooded, and no Great Blue Heron activity was noted by Potter and Davis (1974) during their visit to the area.

On 24 July 1975, Potter saw an adult Great Blue Heron flying diagonally across Moccasin Creek at Rosinburg Road. The bird carried unidentified prey in its bill and was headed toward the Buzzard Rocks. Potter found no nests at nearby wetlands she believed likely to provide suitable nest sites for large herons. At that time she was unaware of the beaver ponds adjacent to the Zebulon Country Club property, which she first visited in 1987.

Standing on the Buzzard Rocks today, one can look upstream to the heronry with the view obscured only by the row of pines growing on a ridge that projects into the pond from the Wake County side of the creek downstream from the nests. Common Cat-tails (*Typha latifolia*) and other perennial water plants grow profusely in the marsh near the base of the rocks. The heronry at the golf course appears to have been established as soon as enough of the dead trees in the beaver pond immediately upstream from the Buzzard Rocks had

fallen to permit the birds to fly to and from the nest trees. Whether that was in 1975 or later cannot be determined.

In the spring of 1996 the dam at the swimming pool was lengthened and raised. This deepened the pond but did not seem to increase its surface area significantly because of the surrounding steep hillsides. In May 1996, Potter and Barkley found a fairly new dam upstream (north) from the Rosinburg Road bridge. Trees standing in the water behind that dam had not yet died. Water from a dam on the south side of Rosinburg Road was backed up to the new dam. Enough trees had died and fallen between the new dam and the bridge to offer glimpses of cars traveling the highway, but the growth still appeared too dense for use as a nesting site by Great Blue Herons.

Tributaries to Moccasin Creek have been impounded near the golf course to form farm ponds, fishing ponds, and water hazards. During post-breeding dispersal and the winter months, Great Blue Herons frequent the manmade impoundments, but they do not provide suitable nesting sites.

On 14 April 1996, Potter followed the line of flight of an adult Great Blue Heron that was carrying a stick in its bill. At the pond upstream from the Buzzard Rocks, she found four active nests, three with incubating birds (Nests B, C-1, and C-2; see Table 1) and one with a standing bird in attendance (Nest A). The standing bird apparently had just added the stick to its nest. That nest probably contained newly hatched young, judging by the size of the chicks in it two weeks later.

All four nests were in tall dead trees standing in the pond. Nest B was built in a tree so near the east shore of the pond that it must certainly be on the Franklin County side of the former run of the creek. All of the other nests appear to be in Wake County.

No additional nesting sites were found along Moccasin Creek in 1996, but widespread evidence of beaver activity suggests that other heronries must exist on the creek or its tributaries—if not right now, then at some future time when a few more dead trees have fallen.

Care and Behavior of Young

Because of its small size and proximity to Potter's home, the Moccasin Creek heronry offered excellent opportunities to observe parental care and the development and behavior of the young. For example, the young from Nest A (see Table 1) had left the colony and those from Nest C-1 had not yet fledged when the three fledglings from Nest B were seen in the bushes and water near the base of that nest tree. The Nest C-1 young paid little or no attention to the Nest B fledglings. However, when two young from Nest C-1 were in approximately the same bushes and water, their nestmate, which had moved

to the vacant Nest C-2, watched their movements intently. For a time that bird crouched in the nest with its neck extended over the rim in the direction of the two young herons standing in the water below.

Because construction of Nest D did not begin until late May, the single surviving nestling from that brood was the only hatching-year Great Blue Heron left in the colony by 13 July. On that date Potter and Barkley found that all five nests had survived the wind and rain associated with the passing of Hurricane Bertha on 12 July. One nestling, with a white cheek and a dark, fuzzy crown, was seen in the new nest. The nestling was still present on 20 July and on 3, 10, 15, and 17 August. On the last date the young bird stood for the entire period of observation (0645-0745 h EDT). At 0715 h it made begging noises when a Great Blue Heron flew over trees along the west (Wake County) bank of the pond. Although no parent approached, the young bird moved to the highest part of the nest, as if expecting to be fed.

The young Great Blue Heron was still in Nest D on 20, 24, 26, and 28 August. On the 28th an adult perched in Nest C-2 (a short distance northeast of Nest D), and the young bird begged excitedly. The adult flew downstream without feeding the nestling, which immediately turned to face downstream.

On 29 August the young bird was perched on a limb near Nest D. It returned to the nest and began begging. An adult arrived, fed the nestling, and departed in the upstream direction, croaking as it flew. The nestling stood, silent and motionless, looking upstream.

At 1750 h on 30 August, the young Great Blue Heron poked its bill into the bottom of the nest, as if picking up remnants of food, and occasionally begged briefly. At 1820 h an adult arrived. The young bird flapped its wings, begged frantically, and attempted to feed from the adult's mouth. The parent apparently regurgitated food into the nest and flew upstream, croaking as it departed. The nestling pecked at the bottom of the nest and looked upstream. Just as the adult flew away, a Great Egret (*Ardea alba*) arrived from downstream and perched in a dead tree near Nest D. Neither the adult Great Blue Heron nor the nestling paid any attention to the visitor, which soon departed.

At 0900 h on 31 August the young heron began flapping its wings and making begging noises. An adult came to the nest from the downstream side. The two struggled, with the nestling attempting to feed from the adult's mouth and the adult trying to disgorge food into the nest. Mission accomplished, the adult flew away upstream. A second Great Blue Heron was in the area, but its presence did not stimulate begging behavior. During all the feeding observations at Moccasin Creek, the only young heard to beg were those about

to be fed by the arriving adult. Arriving adults usually perched in a nearby tree and moved to the nest only when ready, or nearly ready, to regurgitate food.

On 1 September the lone bird was still in Nest D. Standing on a stub just above Nest C-2 was a Great Blue Heron of unknown age. It flew downward, as if to forage for prey in the water below. The nestling paid no attention to it.

At 0745 h on 2 September the young bird was perched at the tip of a limb below the nest. It begged and flapped its wings. About 0810 h, it returned to the nest and begged more vigorously. It continued to alternate periods of resting and begging until 0905 h, when it moved to a limb above the nest on the downstream side of the tree. About 10 minutes later, the young bird flew to the top of a living pine tree in a row of pines about 60 feet (20 m) downstream from the nest tree. An adult immediately came to the nest from beyond the pines and perched facing the fledgling, which begged vigorously and continuously for about 10 minutes. No neck movements consistent with regurgitation were seen, and the adult did not disgorge food into the nest. At 0925 h the young bird flew back to the nest; the adult immediately departed, flying downward through the row of pine trees where the fledgling had been perched. The young bird begged several times, but was not seen to peck the bottom of the nest. By 0945 h the young bird had settled on the nest as if resting. Potter departed, believing that hunger would soon force the youngster to leave the nest for good.

Feeding Territories

At the peak of the nesting season, no adults were seen foraging in the immediate vicinity of the nest sites at Buffalo Creek and Moccasin Creek. Only while the lone bird remained in Nest D on Moccasin Creek was an adult Great Blue Heron seen repeatedly at nearby water hazards. Birds of the year, however, did not frequent the water hazards. Apparently they moved to distant feeding areas once they were able to travel beyond the immediate vicinity of their respective nest trees. Such post-breeding dispersal is normal for the species.

Random observations indicate some of the places the breeding adults probably obtained food.

Buffalo Creek.—The density of vegetation upstream and downstream from the heronry prevented access along the run of the creek. Arriving adults flew low over clearings to the east and west of the colony before slipping through an opening at the edge of the swamp and flying to a perch. Departing birds flew low over the clearings before gaining altitude and heading for distant feeding sites.

Alderink saw adult Great Blues downstream from the Buffalo Creek site in the vicinity of the community park at the west end of Third Street in Wendell. A pasture lies between the park and the creek. A trail leads from the park to the edge of a swampy area along the east side of the creek. From the trail Alderink saw Great Blue Herons in flight, and one time a bird put down near the end of the trail, apparently in search of prey. On several occasions, while driving along Poole Road, Alderink saw a Great Blue Heron wading in water up to its belly at Lake Myra, about 6 miles (10 km) southwest of the Buffalo Creek heronry. Lake Myra is on Marks Creek, which flows into the Neuse River northeast of Clayton in Johnston County.

Potter saw Great Blue Herons standing along several waterways during the nesting season. Those sightings combined with the lines of flight for some individuals apparently moving to and from the Buffalo Creek colony across US 64 between Knightdale and Zebulon indicate that adults may have been foraging as far away as the ponds east of the Neuse River along Old Milburnie Road (Wake Co.). Others may have visited sites upstream along Buffalo Creek and along Little River between Wendell and Zebulon.

Little River.—Adults were often seen leaving and returning to nests still occupied by young. Almost always the flight paths were upstream along the river or downstream across the peninsula that lies between the beaver pond and Mudham Road. Some of the birds originally assumed to have come from the Buffalo Creek colony may well have come from the one on Little River, which was unknown to Potter and Alderink until after the end of the nesting season. The dam on Little River at the Zebulon Water Plant is only 4.6 air miles (7.5 km) upstream from the heronry.

Moccasin Creek.—While feeding young in the nest, adults invariably arrived and departed by flying upstream or downstream far enough so their lines of flight to and from feeding sites were not easily observed.

Adults moving to and from the Moccasin Creek colony appeared to be foraging at various points along Little River from Riley Hill Road as far north as the Mitchell Mill Natural Area and a manmade pond on Perry Creek at NC 96 (Wake Co.); along Beaverdam Creek and an unnamed creek, both tributaries to Moccasin Creek that lie between the golf course and Zebulon (Wake Co.); in the vicinity of Cedar Creek at NC 39 (Franklin Co.); on the Mort Harris farm at the headwaters of Jumping Run (Franklin Co.); along Crooked Creek at Old Bunn Road (Franklin Co.); and along Moccasin Creek south of Bunn Lake. All of the aforementioned sites are within 15 air miles (24 km) of the Moccasin Creek heronry, most are within 10 air miles (16 km), and several are within 5 air miles (8 km).

Range of Flight.—Palmer (1962) reports the air speed of cruising Great Blue Herons to range from 19 to 29 mph (30.5–47.0 km/h). At a relatively slow 20 mph, a bird could travel 5 miles (8 km) in 15 minutes, 10 miles (16 km) in 30 minutes, and 15 miles (24 km) in 45 minutes. The Old Milburnie Road site is about 6 air miles (less than 10 km) from the Buffalo Creek heronry. Some of the places mentioned as probable feeding sites for adults from the Moccasin Creek heronry fall within the 15-minute range (e.g. Beaverdam Creek). The two most distant sites, the pond on Perry Creek and the Mort Harris farm, are well with the 45-minute range at approximately 11 and 12 miles (18 and 20 km), respectively.

Feeding singly at widely dispersed sites and avoiding straight-line flight paths between nests and feeding sites appear to be effective strategies for concealing nesting activities even when the colony is close to a busy highway (Buffalo Creek and Little River), human dwellings (Moccasin Creek and Little River), or recreation areas (Buffalo Creek and Moccasin Creek).

Roosting

Adult Great Blue Herons did not appear to roost at the Moccasin Creek nesting site. Price and several golfers (personal communications) mentioned seeing the birds frequently in the vicinity of the No. 5 fairway, which is across Pearces Road from the nesting site. When Potter and Barkley visited that area well after sunrise, they saw no herons and judged the habitat to be unsuitable for nesting and unlikely to be good for feeding. It seems likely that the herons roosted there.

Post-breeding Activities

Buffalo Creek.—Hurricane Fran struck central North Carolina the night of 5–6 September 1996. A post-Fran visit to Buffalo Creek in October revealed extensive damage, with some nest trees toppled and others stripped of lateral branches that formerly supported a nest. However, two substantial nests in large trees on the western edge of the site were damaged only slightly if at all, and several apparently suitable dead trees were still standing in the central part of the heronry. Of the two remaining nests, one was in a large dead tree and the other in a large living cypress.

Upon their arrival at Buffalo Creek on 28 November, Potter and Barkley flushed a Great Blue Heron that appeared to be foraging in water near the roadside. The bird flew to a perch toward the eastern edge of the nesting site, where there had been at least one active nest during the spring of 1996. Potter and Barkley immediately noticed a mass of sticks that appeared to be the foundation for a new nest between the perched heron and the nests that

survived the hurricane. The nesting material was so conspicuous that it could not have been overlooked during the previous visit. Scanning the heronry site with her binocular, Barkley located a second substantial nest in a living cypress. That nest probably was hidden by cypress foliage during the previous visit. All three large nests were so close together that they could be seen simultaneously in the field of the 30X telescope.

Little River.—None of the six nests or nest trees survived Hurricane Fran. Most of the overstory vegetation within the flood plain in the immediate vicinity of the heronry had already succumbed to persistent flooding and girdling by Beavers, and many of the remaining snags have now been delimbed, broken, or toppled by the hurricane. Few suitable replacement nest trees currently exist near the heronry. Although several sizable living hardwoods on the upland border of the beaver pond were also toppled by Hurricane Fran, the heronry is still shielded from view by the remaining trees on the upland slopes. When Brown visited the colony site the first weekend of January 1997, he found three Great Blue Herons present but did not see any evidence of nest construction.

Moccasin Creek.—During their first post-Fran visit to the Moccasin Creek heronry, Potter and Barkley found all nest trees still standing, but the Nest A tree no longer had the three stout limbs that formerly supported the nest. Four of the five nests had been blown away, leaving only Nest B to be refurbished in the coming breeding season.

On 18 November 1996 Potter, Barkley, and Mary P. Dieker, of Chicago, Illinois, visited the Moccasin Creek heronry. A new nest (C-2R) had been constructed to replace the one destroyed at the C-2 nest site. About the same size as the one it replaced, the new nest appeared to have a well-developed central depression; no nest lining could be detected. No Great Blues were seen at the heronry, in flight, or at nearby ponds on that date.

On 24 November Potter and Barkley noticed that Nest C-2R was somewhat bulkier than it had been on 18 November. The central depression was no longer visible. One Great Blue Heron was perched on a dead tree between the nest site and the Buzzard Rocks. Walking upstream, the observers flushed two Great Blues from a point near what had been the Wake County end of the 1967 beaver dam. Only short remnants of that dam had survived the flooding caused by Hurricane Fran. Continuing their route upstream from the heronry, Potter and Barkley flushed a fourth Great Blue that was standing beside a culvert running beneath the entrance road to the golf course. Whether

TABLE 1. Summary of development of young Great Blue Herons from

	14 APR	27 APR	4 MAY	25 MAY	1 JUN	8 JUN
Nest A (large, built in crotch)	Newly hatched young	3 active downy young	4 well- feathered young; short, erect feathers on crown; wisps of down on feathers of nape	4 young in nest	4 young in nest	4 young perched in or near nest
Nest B (large plat- form at top of tree)	Adult incu- bating eggs	Adult brooding young	Adult brooding young	3 well- feathered young in nest	3 well- feathered young in nest	3 young ca. 1 week younger than ones in Nest A
Nest C-1 (upper of 2 small nests in same tree)	Adult incu- bating eggs	Adult brooding young	Adult brooding young	3 well- feathered young in nest	3 well- feathered young in nest	3 young ca. 2 weeks younger than those in Nest A
Nest C-2 (below C-1)	Adult incu- bating eggs	Adult brooding young	Adult brooding young	1 well- feathered young	1 well- feathered young	1 well- feath- ered young
Nest D (skimpy, loosely woven)				Pair building	Nest appeared incom- plete	Adult incu- bating eggs

five nests on Moccasin Creek, Wake and Franklin counties, N.C., in 1996.

10 JUN	23 JUN	29 JUN	5 JUL	6 JUL	13 JUL	20 JUL - 2 SEP
4 young perched in or near nest	Nest empty					
3 young in nest	Nest empty	3 young in bushes near base of nest tree				
3 young in nest	3 young in nest	2 young in nest; 1 standing on Nest B	3 young still in or near nest; 2 flew to bushes in water near base of nest tree	1 young standing on Nest C-2, which had been enlarged by a spill from C-1		
1 young in nest	1 young in nest	Nest empty				
Adult incubating eggs	Adult incubating eggs	Adult incubating eggs	Adult standing on rim of nest and preening	Adult appeared to feed 2 newly hatched young	1 young with dark, fuzzy crown and white cheek	1 well-feathered young (See text for notes on care and behavior.)

the four birds seen actually represented four different individuals could not be determined, but there were certainly no fewer than three herons present.

Walking more or less the same route on 26 November, Potter flushed one Great Blue from the pond at the No. 18 tee. On 28 November, Potter and Barkley saw no herons at the golf course. However, they did find single Great Blues above the dam on Little River at NC 97 (Wake Co.), at a farm pond on Oakley Road (Wake Co.), and at a farm pond on Old US 64 southwest of Pilot (Franklin Co.). The last two sites are near the stretch of Moccasin Creek between the heronry and the headwaters of Bunn Lake, a distance of about 2 miles (3 km).

Notes on Other Species

Other birds found in association with the Great Blue Herons at Buffalo Creek (BC) and Moccasin Creek (MC) during the 1996 nesting season included Green Heron (*Butorides virescens*), Canada Goose (*Branta canadensis*, MC), Wood Duck (*Aix sponsa*), Red-shouldered Hawk (*Buteo lineatus*), Belted Kingfisher (*Ceryle alcyon*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), Red-bellied Woodpecker (*M. carolinus*), Northern Flicker (*Colaptes auratus*), Pileated Woodpecker (*Dryocopus pileatus*), Acadian Flycatcher (*Empidonax virescens*), Great Crested Flycatcher (*Myiarchus crinitus*), Eastern Bluebird (*Sialia sialis*), European Starling (*Sturnus vulgaris*, BC), Prothonotary Warbler (*Protonotaria citrea*, MC), and Common Yellowthroat (*Geothlypis trichas*, BC).

A pair of Green Herons nested in a densely vegetated cove formed by two ridges projecting into the Moccasin Creek beaver pond occupied by the Great Blue Herons. The adult Green Herons foraged along the edges of the 7-acre pond adjacent to Potter's house in the dogleg of the No. 11 fairway. Once the young Green Herons were on the wing, the family party was seen at the pond regularly until time for the fall migration.

Discussion

The heronries in eastern Wake County on Buffalo Creek, on Moccasin Creek along the Franklin-Wake county line, and on Little River in northern Johnston County represent the first reported nesting by Great Blue Herons in the eastern piedmont of North Carolina. What appear to have been the first nesting sites in the western piedmont were discovered in 1991. James F. Parnell (1992) saw 18 to 20 active nests in a swamp east of Salisbury, near High Rock Lake, during an aerial search for eagle nests on 17 March 1991,

and Ken Knight (1992) saw at least four active nests at a beaver-pond complex near Clark Creek in western Cabarrus County during the 1991 nesting season.

Palmer (1962) makes no reference to Great Blue Herons rebuilding destroyed nests in autumn. Potter and Barkley believe their observations reported herein to be the first published account of such activity.

Much remains to be learned about Great Blue Herons in the Carolinas and throughout their range (Palmer 1962). There are no data on their use of beaver ponds in the 1800s, and Beavers had been extirpated from North Carolina by the early 1900s (Lee *et al.* 1982: 43). Reintroduction efforts, which began in Richmond County in 1938 and continued at various locations into the 1960s, have been so successful that Beavers are now considered pests in many areas.

In parts of the piedmont and the inner coastal plain, Beavers have created suitable nesting habitat for large herons where none existed 50 years ago. Assuming there will be no concerted effort to eradicate Beavers from central North Carolina, it seems inevitable that Great Blue Herons will continue to expand their breeding range in the piedmont and in the inner portions of the coastal plain. Inhabitants of new heronries may soon be joined by Great Egrets, which frequently nest in association with Great Blues in the coastal plain (Soots and Parnell 1979). Yellow-crowned Night-Herons (*Nyctanassa violacea*), Wood Ducks, and Red-headed Woodpeckers are other species that may benefit from the growing number of beaver ponds in the region.

It is hoped that the present paper will encourage bird students to document additional heronries and help improve our understanding of the life history of Great Blue Herons and of the nesting ecology of inland heron populations.

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Natural Sciences, contributed to the paper by putting Potter, Barkley, and Alderink in touch with Brown.

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Addenda

All three heronries were checked periodically from January through June 1997. Brown found no nests at the Little River site, but nesting took place on Buffalo Creek and Moccasin Creek.

Buffalo Creek. Alderink counted 11 active nests on 24 February 1997. Potter and Barkley visited the site the following day and counted 11 nests, including the three substantial nests that apparently survived Hurricane Fran and the one that was under construction on 28 November 1996. One of the 11 was still in the early stages of construction.

On 17 March Potter and Barkley counted 25 nests, all on the west side of the creek and nearly all in living cypress trees. Some nests were still under construction, but incubation had begun at several nests. Courtship feeding was seen once.

By 27 March the advanced growth of foliage made observation of the nests difficult. No new nests were found, and incubation was definitely under way on all of the 25 nests that could be seen well.

It seems possible that the birds displaced from the Little River site contributed to more than doubling the number of nests in the Buffalo Creek heronry. *Triangle Land Conservancy News* (Vol. 14, No. 1, March 1997) reports that TLC has obtained a conservation easement for a portion of the Buffalo Creek cypress stand that appears to encompass all, or at least most, of the heron nests.

Moccasin Creek. On 7 February 1997, two Great Blue Herons flew from the heronry and perched in trees near the Buzzard Rocks. On 25 February, Nest B had an adult in attendance but did not appear to have been enlarged. The replacement nest (C-2R), begun in November 1996, had been enlarged. At the tree that formerly held Nest D, a new nest (D-1) was in the early stages of construction on a limb below the site of the original nest. Adults were seen in the beaver pond near the swimming pool at the Zebulon County Club, in an area that soon would be hidden by leaves emerging on hardwood saplings. Nest D-1 was somewhat enlarged on 28 February.

On 12 March, a new nest (D-2) was under construction above the site of the original Nest D. On 17 March Nest D-2 was still under construction, and two adults were in attendance. One gathered twigs from pines on the ridge extending into the pond near the nest tree. Twigs were passed to the bird standing on the nest. The second bird worked them into the nest structure.

On 23 March incubation appeared to be under way at Nests B, C-2R, and D-1. A pair was in attendance at D-2, but their restless behavior suggested that incubation had not yet begun.

On 13 April one very small nestling was seen in Nest D-1; behavior at Nests B and C-2R suggested young had hatched. No activity was seen at Nest D-2.

On 4 May there were three young in Nest B, three in C-2R, and at least one in D-1; no activity was seen at D-2.

On 22 May there were three well-feathered young in Nest B, two in C-2R, and three in D-1. Two adults were in attendance at Nest D-2, but the contents of the nest, if any, could not be seen or heard.

29 May and 1 June there were two large, active young in Nest B, two in C-2R, and three in D-1. Incubation appeared to be under way at D-2, which subsequently failed. Young fledged from the other three nests by mid-June but returned to nests between feeding forays for a week or more.

General Field Notes

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A Spring Banding Encounter with a White-Fronted Goose in Inland South Carolina

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The White-fronted Goose (*Anser albifrons*) is a rare winter resident of South Carolina. There are less than a dozen records of this species from the state and only one specimen available (Sprunt and Chamberlain, 1970; Post and Gauthreaux, (1989). The mid-continental population of this species is resident from the Mississippi Alluvial Valley to coastal and inland Louisiana and Texas (*A. a. frontalis*), with very infrequent occurrences of the Greenland subspecies (*A. a. flavirostris*) in the Atlantic coastal states (Ely and Dzubin, 1994).

We report here the capture, banding and release of an adult male White-fronted Goose on the 87ha Pond B reservoir of the U.S. Department of Energy's Savannah River Site (SRS), Barnwell County, South Carolina, on 17 May, 1995.

This goose was in good condition at the time of its capture, and it flew off strongly on release the following day, after being examined, photographed and banded. The goose was captured by hand-grabbing it out of the water as a result of fortuitous circumstances of surprise and pursuit of the bird with an air boat as it fled into heavy emergent macrophyte cover that prevented its becoming airborne. Examination of this bird indicated it to be an adult (ASY) male because the bird had a penis, it had a white front and speckled belly, the

upper-wing coverts were blunt, squarish to trapezoidal, the bursa was closed to shallow and probed with difficulty (USFWS 1977).

Unusual field encounters with waterfowl such as this species always involve the possibility of escapees from avicultural collections. However, a careful examination of this bird revealed no evidence of worn or soiled plumage such as is often found in the case of escaped captives, and the hallux on each leg was intact. Federal regulations require the removal of this structure on the right leg to identify captive birds. Nevertheless, because of the remote possibility that this bird was an escaped captive, it became important to verify its identification vs. those similar species and/or subspecies that would not be expected to occur in this region. Our bird clearly lacked the "extensive white forehead and forecrown" typifying the Eurasian Lesser White-fronted Goose (*A. erythropus*) as described by Cramp and Simmons (1977), and it lacked the darker chocolate brown coloration of the dorsal plumage, head and neck of the west coast subspecies (*A. a. gambeli*).

The two subspecies of the White-fronted Goose likely to occur in South Carolina are most readily distinguished from each other by the color of the bill: bright orange in the Greenland subspecies, *A. a. flavirostris*, vs. pinkish in *A. a. frontalis*, with the former being also slightly darker (Ely and Dzubin, 1994). On the basis of these criteria, particularly its bright orange bill, we would identify our bird as being of the subspecies *A. a. flavirostris*. Color photographs of our bird, along with an account of its capture and banding, have been placed in the collection of ornithological records of the Charleston Museum. The only specimen available for this species from South Carolina, a goose shot on January 5, 1927, on a plantation in Berkeley County, was also identified as being of this Greenland subspecies by Charles E. O'Brien of the American Museum of Natural History (Sprunt and Chamberlain, 1970); Post and Gauthreaux, 1989).

The most recent accounts of this species have been in the Piedmont region (Clemson) during February of 1988 and 1987. Two additional Piedmont records were birds shot in Edgefield County. Additional sightings have been reported in February 1980 in the Santee National Wildlife Refuge located in the coastal plain region of SC (McNair and Post and Gauthreaux 1993). Ely and Dzubin (1994), however, indicate that the mid-continent population of this species is beginning to show a shift in its winter range to include a greater use of inland impoundments and lakes, with casual occurrences in Mississippi and Alabama. It is notable in this regard that our specimen was found on an inland impoundment which has enjoyed a long history of stable water level management and the consequential development of extensive areas of aquatic macrophyte cover (Whicker *et al.*, 1990). The importance of the Pond B

reservoir and the other impoundments of the SRS as inland wintering sites for migratory waterfowl has been summarized by Mayer *et al.* (1986). Bryan *et al.* (1996) have described how these same SRS reservoirs and the increasing number of other large inland impoundments in South Carolina have increased the inland abundance of Bald Eagles (*Haliaeetus leucocephalus*) in this part of the state. These same reservoirs may now have also become a factor in increasing the inland range and lengthening the season of occurrence of the White-fronted Goose in this part of the state.

Acknowledgments

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CAROLINABIRDS

Carolinabirds is an Internet e-mail discussion group about birds and birding in the Carolinas. Subscribers frequently post sightings to it similar to those found in Briefs for the Files, but unusual behavior receives more attention. Subscriptions are free. To subscribe, address an e-mail message to <majordomo@acpub.duke.edu>. Don't fill in the subject line. As your message, simply put, "subscribe carolinabirds" (without the quotes). You will receive a confirmation and more information shortly.

BRIEFS FOR THE FILES

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(All Dates Fall 1996)

RED-THROATED LOON: The only inland report involved one at Salem Lake, Forsyth County, NC, Nov. 4 & 10 (Ramona Snavelly, Regina Burt, Ann Newsome, Doug DeNeve).

PACIFIC LOON: One was once again found at Figure Eight Island, New Hanover County, NC, Nov. 30 (Derb Carter). Pacifics are becoming regular in this location, in late fall - early winter, usually in large Common Loon flocks.

COMMON LOON: An excellent local count of 32 was found on Lake Townsend, Guilford County, NC, Nov. 21 (Herb Hendrickson *et al.*). Also one was very early near Fayetteville, NC, Sept. 7 (Hal Broadfoot).

PIED-BILLED GREBE: A good local count of 433 was at the Savannah Spoil Site, Jasper County, SC, Oct. 3 (Steve Calver).

RED-NECKED GREBE: The only report was of one at Sullivan's Island, SC, Nov. 23 (Ben Smith, Giff Beaton, Bob & Barbara Maxwell).

EARED GREBE: The annual birds at the Goldsboro, NC, Wastewater Treatment Plant arrived on Sept. 4, and a high count of nine was present there throughout the fall (Eric Dean). Other reports included one in the mountains near Brevard, NC, Nov. 10 (Simon Thompson), one at the Savannah Spoil Site, SC, Nov. 9 - 22 (Steve Calver), and another at the Hemingway, Williamsburg County, SC, sewage lagoons Nov. 29 (Robin Carter, Caroline Eastman).

NORTHERN FULMAR: Eight were found on a trip out of Hatteras, NC, Oct. 7 (Brian Patteson).

BLACK-CAPPED PETREL: Numbers of this species off North Carolina were up this season. Excellent totals included 247 off Hatteras Aug. 4 (Brian Patteson *et al.*), 207 off Oregon Inlet Aug. 10 (Todd McGrath *et al.*), and 83 off Hatteras Oct. 12 (Patteson).

FEA'S PETREL: This much-sought-after species was found once, with an individual off Oregon Inlet, NC, Aug. 10 (Todd McGrath *et al.*).

HERALD PETREL: The month of August had a flurry of sightings of this now rare but regular visitor. Off Oregon Inlet, NC, singles were found on the 3rd & 5th (Todd McGrath *et al.*) and the 18th (Mike Tove *et al.*). Two were found

on the 10th (McGrath *et al.*) and the 17th (Tove *et al.*). One was found off Hatteras on the 11th (Brian Patteson *et al.*).

GREATER SHEARWATER: The best count of the season was the 118 off Oregon Inlet Aug. 12 (Todd McGrath *et al.*).

MANX SHEARWATER: This species is normally a winter visitor and spring migrant off our shores. Late summer and early fall reports have been few and far between - but not this year! Two were off Hatteras Aug. 10 & 11 (Brian Patteson *et al.*) and one was off Oregon Inlet Aug. 12 (Todd McGrath *et al.*). Also three were found off Hatteras Sept. 29 (Patteson *et al.*).

AUDUBON'S SHEARWATER: An excellent total was the 952 seen off Hatteras, NC, Aug. 10 (Brian Patteson *et al.*).

WILSON'S STORM-PETREL: Another good species count was the 1,130 out of Oregon Inlet, NC, Aug. 18 (Mike Tove *et al.*).

WHITE-FACED STORM-PETREL: It is always exciting to find one of these storm-petrels offshore. They are regular but in very small numbers each year. This season one was out of Oregon Inlet, NC, Aug. 5 (Stephen Bailey, Todd McGrath *et al.*).

LEACH'S STORM-PETREL: This species was found offshore twice; seven off Hatteras Aug. 10 (Brian Patteson *et al.*) and three out of Oregon Inlet Aug. 18 (Mike Tove *et al.*).

BAND-RUMPED STORM-PETREL: Numbers were up this year as evidenced by several good counts. Off of Hatteras, 47 were seen Aug. 10 (Patteson *et al.*) and an impressive 91 were tallied (some duplication?) off Oregon Inlet Aug. 10 (McGrath *et al.*).

WHITE-TAILED TROPICBIRD: In North Carolina, trip totals out of Hatteras included one Aug. 3 and three Aug. 24 (Patteson *et al.*). Out of Oregon Inlet, one was seen Aug. 10 and two were found Aug. 12 (McGrath *et al.*). In South Carolina, where the species is harder to come by, one was found out of Murrell's Inlet on the late date of Oct. 12 (Jack Peachey).

MASKED BOOBY: The only report this season was of an immature seen from shore near Avon, NC, Aug. 1 (B. Taber)!

HURRICANE FRAN SIGHTINGS: See the table at the end of this section.

AMERICAN WHITE PELICAN: Reports of this species included three in the Oregon Inlet, NC, area Oct. 7 (B. & L. Collier) until Oct. 10 (Marcia Lyons, Steve Ryan, A. Whitlock, B. Halstead); three at the Savannah Spoil Site, SC, Oct. 11 (Steve Calver); and two along the Intracoastal Waterway, Holden Beach, NC, Oct. 27-28 (Dick Brown, Diane Hahn, Carolyn Bush, Mary McDavit).

ANHINGA: Good inland reports included one in Cumberland County, NC, Aug. 1 (Hal Broadfoot), one in Spartanburg County, SC, Sept. 21 (Joel Jones,

fide Lyle Campbell), and one seen from the Mountain View Overlook, Kerr Scott Res., NC, hawkwatch this fall (second year in a row!) as reported by Adam Martin. Also a good count of seven was at Carolina Sandhills N.W.R., SC, Aug. 3 (Albert Conway), with one still there on the late date of Nov. 7 (Peter Range).

MAGNIFICENT FRIGATEBIRD: The only report was of an immature male seen flying south over the dunes at Duck, NC, Sept. 6 (Charles Stevens), most likely brought up by Hurricane Fran.

GREAT EGRET: Some noteworthy late sightings of this species involved one far inland at Lake Julian, Buncombe County, NC, Nov. 7 (Betty McIlwain, Wayne Forsythe), one at Lake Auman, Moore County, NC, Nov. 13 (Dick & Lois Dole), and one in Wayne County, NC, Nov. 24 (Eric Dean).

LITTLE BLUE HERON: One was locally unusual at Jackson Park, Hendersonville, NC, Sept. 4 (Wayne Forsythe).

TRICOLORED HERON: One was far inland at the Broad River Waterfowl Management Area, Fairfield County, SC, Oct. 19 (Bob Wood *et al.*).

REDDISH EGRET: One was again present at Huntington Beach State Park, SC, throughout the fall (Bob & Barbara Maxwell) and was last seen Nov. 29 (Jack Peachey). In North Carolina, up to two were present at the Cape Hatteras Point pond until at least Aug. 14 (Pat Moore, Chris Eley); one was at Pea Island N.W.R. Sept. 3 (A. Whitlock) until at least Oct. 14 (G. Brown); one was still at Sunset Beach Sept. 21 (Kitty Kosh *et al.*); and three were at the eastern end of Shackleford Banks, Carteret County, Sept. 8 (Bob Holmes, Wade Fuller). This last group was noteworthy since it included a dark phase adult and a white phase bird - the two rarest phases found in the Carolinas!

CATTLE EGRET: A locally rare report involved four near Charlotte, NC, Aug. 4 (Taylor Piephoff). Also 150 at Hunting Island, SC, Aug. 5 (Giff Beaton, Kevin Danchisen, Lex Glover) was a good fall total.

GREEN HERON: Late Green Herons included one at Pea Island N.W.R., NC, Nov. 29 (Toni & Bob Hartman) and another on the 29th far inland at Moss Lake, Shelby, NC, (Pat Wilkison, JoAnn Martin).

BLACK-CROWNED NIGHT-HERON: A rare local record was provided by an immature at Rocky Mount, NC, Oct. 26 (Ricky Davis, Tri-County Bird Club).

WHITE IBIS: An immature provided only the third county record when one was in Mecklenburg Co., NC, Aug. 2-4 (Steven & Karen Spencer *et al.*, *fide* David Wright).

GLOSSY IBIS: Inland reports included one south of Fayetteville, NC, Sept. 7 (Hal Broadfoot) and one at Lake Mattamuskeet, NC, Nov. 17 (John & Paula Wright *et al.*).

WOOD STORK: The usual Sunset Beach, NC, flock peaked at an impressive 105 in August, and one remained through the end of November for an exceptionally late record (Diane Hahn, Mary McDavit). This species also did well in South Carolina, with several noteworthy reports. An excellent total of 254 was had in Beaufort County, SC, Sept. 21 (Lex Glover, Bert Fisher, Leto Copeley). Interesting inland reports included one at the Congaree Swamp National Monument Aug. 31 (Robin Carter), 19 flying down the Great Pee Dee River, Florence County Sept. 6 (Lex Glover), and four at Lake Murray, Saluda County Sept. 23 (Lex Glover, Mike Turner).

TUNDRA SWAN: Inland reports involved single immatures at Bethel, Fairfield County, SC, Nov. 30 (Richard Ragsdale, Jr., Juanita Ragsdale, Ramona Rivers, *fide* Donna Bailey) and at Lake Pinehurst, Moore County, NC, Nov. 29 (Dick Burk).

MUTE SWAN: One was present in the North Pond, Pea Island N.W.R., NC, area all fall (present from the spring). A surprise was the three found on South Pond, Pea Island Aug. 4 (Ned Brinkley) - now where did they come from?

WHITE-FRONTED GOOSE: In North Carolina this species made a good showing with two reports. One was found at Pea Island N.W.R. Oct. 22 (Wayne Irvin), and two were at Lake Mattamuskeet N.W.R. Nov. 16 (Bob Holmes, Wade Fuller).

SNOW GOOSE: Some of the more interesting reports included 8 (4 Blues, 4 Snows) far to the south at the Savannah Spoil Site, SC, Nov. 22 (Steve Calver) and 5 (4 Blues, 1 Snow) in the mountains at Deerlake, Brevard, NC, Nov. 8-9 (Betty McIlwain).

ROSS' GOOSE: This now annual species was found in the usual locations: one at Pea Island N.W.R. Nov. 13-22 (Jim Ward, C.H. Gambill) and up to two at Lake Landing, Mattamuskeet N.W.R. Nov. 10 & 17 (Haven Wiley, Jeremy Hyman).

BRANT: One was present at North Pond, Pea Island N.W.R. Nov. 3-15 (sev. ob.), an unusual spot for a bird usually found in the sound.

GREEN-WINGED TEAL: The summering pair at Rocky Mount, NC, remained until at least Aug. 24 (Ricky Davis).

CINNAMON TEAL: An eclipse male was found at Bodie Island Lighthouse Pond Oct. 20 (Kent Fiala) and remained until the end of the period (m. ob.). By mid-November, the bird had acquired good plumage and was considerably nicer to look at! In South Carolina, a male was seen at the Savannah Spoil Site Oct. 18 (Steve Calver), the same area where this species was present last winter!

NORTHERN SHOVELER: A locally unusual total of 25 was at Lake Auman, Moore County, NC, Oct. 30 (Dick & Lois Dole). Also 5 were early at the Savannah Spoil Site, SC, Aug. 31 (Steve Calver).

EURASIAN WIGEON: The most reliable spot for this species in the Carolinas is North Pond, Pea Island N.W.R., NC, during the fall. This year at least one male was present from Oct. 5 (Eric Dean, Ricky Davis) until the end of the period (m. ob.). The peak was four males there Nov. 15 (Simon Thompson *et al.*). More unusual was the male at Lake Mattamuskeet N.W.R., NC, Nov. 17 (Ricky Davis, Tri-County Bird Club).

COMMON EIDER: From one to two immatures were present at the jetty at Huntington Beach State Park, SC, Nov. 30 (m. ob.) and a nice flock of six (1 adult male, 5 females) were flying south past Kill Devil Hills, NC, Nov. 16 (Haven Wiley).

OLDSQUAW: Always exciting inland, one was at Cane Creek Reservoir, Orange County, NC, Nov. 27-28 (Jeff Phippen, Chris Eley).

COMMON MERGANSER: A female was seen at Jordan Lake, NC, Sept. 7 (Todd Hass, Roger McNeill *et al.*), no doubt the same individual seen off and on there the last couple of years!

OSPREY: A count of 78 migrants in three hours at Huntington Beach State Park, SC, Sept. 28 (Jack Peachey) was encouraging. Of interest was the observation of an Osprey in Cumberland County, NC, Sept. 14 seen carrying a small bird in its talons (Hal Broadfoot)! Possibly this choice of food was due to the nearby Cape Fear River still being muddy from the Hurricane Fran flooding.

SWALLOW-TAILED KITE: A locally unusual report involved one near Ft. Jackson, Richland County, SC, Aug. 29 (Bruce Cole, *fide* Robin Carter). This species is rare in this area of the Sandhills.

MISSISSIPPI KITE: There were several good reports in North Carolina this fall. One was far inland at Tryon Aug. 12 (Simon Thompson), one was near Carrboro Sept. 6 (Todd Hass), one was at Lake Auman, Moore County Sept. 29, and six were in eastern Johnston County Aug. 10 (Eric Dean). On the coast one was at Corolla, Currituck County, Oct. 5 (Bob Holmes).

COOPER'S HAWK: Interesting sightings included a pair exhibiting territorial behavior by diving at Ravens near Devil's Courthouse, Transylvania County, NC, Aug. 3 (Paul Johnson) and a pair near Apex, NC, Aug. 24 (Merrill Lynch).

BROAD-WINGED HAWK: Numbers of migrant Broad-wingeds were down somewhat this season. The best totals included 1,082 Sept. 21 at Pilot Mountain State Park, NC, (Toby Gordon) and 1,458 at the Mountain View Overlook hawkwatch, Kerr Scott Reservoir, NC, Sept. 29 (*fide* Adam Martin).

One seen at Jordan Lake, NC, Aug. 15 (Jeff Pippen) was either a local breeder or a very early migrant!

GOLDEN EAGLE: Two reports of this species: two were very rare at Carolina Sandhills N.W.R., SC, Nov. 4 (Peter Range), and one adult was seen near Cedar Mountain, Transylvania County, NC, Nov. 27-28 (Aleen Steinberg, *fide* Norma Siebenheller).

MERLIN: Merlins staged a better than average migration in the Carolinas this fall. The better reports involved inland birds, with one at Carver's Gap, Roan Mountain, NC, Oct. 4 (Rick Knight), one at Green Mountain, NC (Nancy Baldwin), and one at Lake Murray, SC, Sept. 28 (Lex Glover, Mike Turner). **RING-NECKED PHEASANT:** Three were found on Portsmouth Island, NC, near Drum Inlet Oct. 27 (Magnus Persmark). It is good to hear that there are still some left on this island. The population on Hatteras Island has been gone for years now.

WILD TURKEY: A high elevation record was provided by six on Richland Balsam, Jackson County, NC, Aug. 21 at 5,500' in spruce-fir forest (Merrill Lynch). One wonders if the rapidly increasing population of this species in the mountains is pushing some individuals to new limits?

PURPLE GALLINULE: A potentially new location for this species was provided by the sighting of an immature at a marshy Carolina Bay west of Erhardt, Bamberg County, SC, Oct. 27 (Robin Carter, Caroline Eastman).

AMERICAN COOT: Numbers were up all over the Carolinas this fall. Several observers noted this trend at many of their usual haunts. Also two were either summering or early migrants at Sunset Beach, NC, Aug. 26 (Mary McDavit).

SANDHILL CRANE: Always exciting anywhere in the Carolinas, reports this fall included two along the Yadkin River near Lewisville, Forsyth County, NC, on the unexplainable dates of July 30 - Aug. 18 (Ray Veach, *fide* Ramona Snavelly); one in flight over Jackson Park, Hendersonville, NC, Oct. 6 (Keith Camburn); one at Cherry Point Air Station, Craven County, NC, Nov. 3 (Jack Fennell, *fide* John Fussell); and one over the Savannah Spoil Site, SC, Nov. 15 (Steve Calver).

BLACK-BELLIED PLOVER: Inland reports included one at Jordan Lake, NC, Sept. 1 (Ricky Davis), two at Latta, SC, Sept. 6, one at Lake Marion, SC, Sept. 7 (Lex Glover), one at Goldsboro, NC, Sept. 12 (Eric Dean), and one at Yates Mill Pond, Raleigh, NC, Sept. 24 (Susan Campbell). Unusual was one offshore out of Oregon Inlet, NC, Aug. 18 (Mike Tove *et al.*).

AMERICAN GOLDEN-PLOVER: This species was reported more frequently than usual this fall. The Orangeburg, SC, sod farm hosted good numbers, with a peak of 14 on Sept. 22 (Lex Glover, Bert Fisher, Leto Copeley, Pete Worthington). Other South Carolina birds included one at the Columbia Metro

Wastewater Plant Sept. 15 (Lex Glover *et al.*) and single birds at the Savannah Spoil Site Oct. 3 & 30 (Steve Calver). In North Carolina nine were near Mills River in the mountains Sept. 8 (Simon Thompson) and an excellent total of 15-17 were near Goldsboro Sept. 12-15 (Eric Dean).

WILSON'S PLOVER: A good local count of 30 was had at Huntington Beach State Park, SC, Aug. 20 by Jack Peachey and Bob Maxwell.

BLACK-NECKED STILT: Two found at the Savannah Spoil Site, SC, were absurdly late on Nov. 9 (Steve Calver). This species normally leaves the Carolinas by the beginning of October!

AMERICAN AVOCET: The Savannah Spoil Site has become the best place in the Carolinas to see Avocets. This fall a record total was had when 925(!) were counted there Oct. 30 by Steve Calver. Not as impressive, but still noteworthy, were several inland reports. One was near Townville, SC, Aug. 25 (Bob Maxwell *et al.*), and one was found dead at Jordan Lake, NC, the same day (Ricky Davis). Another was at Lake Murray, Saluda County, SC, Sept. 23 (Lex Glover, Mike Turner, David Dobson). Also from one to five spent the fall at the spoil pond on the Beaufort-Morehead City, NC, causeway (m. ob.) for a locally unusual occurrence.

GREATER YELLOWLEGS: Three at a pond in Piney Creek, Alleghany County, NC, Aug. 26 (James Coman) were locally unusual.

SOLITARY SANDPIPER: One was unexpected and unusual at Carver's Gap, Roan Mountain, NC, Sept. 8, as noted by Rick Knight.

WILLET: A flock of 14 Willets inland at Falls Lake, NC, Aug. 21 (Jonathan Steere) was truly amazing. Most inland reports involve from one to a couple of individuals.

UPLAND SANDPIPER: This species was found in average numbers at the usual locations. The best counts included a peak of 20 at the Orangeburg, SC, Sod Farm Aug. 31 (Lex Glover, Bert Fisher, Mike Turner, David Dobson) and 10 at Mars Bluff, Florence County, SC, Aug. 22 (Lex Glover, Steve Patterson). In North Carolina, the best count was of up to six at the Cherry Hospital, Goldsboro Aug. 4-Sept. 12 (Eric Dean).

LONG-BILLED CURLEW: The only sightings this fall were of two to three at Cape Romain N.W.R., SC, Aug. 31 (Lex Glover, Bert Fisher, Mike Turner, David Dobson) and two at the east end of Shackleford Banks, Carteret County, NC, Sept. 8 (Bob Holmes, Wade Fuller).

HUDSONIAN GODWIT: This species was found less this fall than usual. Coastal reports included two at Hatteras Inlet, NC, Aug. 29 (Bob Lewis) and two at the Bodie Island Lighthouse pond Oct. 7 (D. Ecker). Much rarer and unexpected, 1-2 were seen inland near Goldsboro, NC, Sept. 13-15 (Eric

Dean), where flooding from Hurricane Fran provided habitat for migrant shorebirds.

RUDDY TURNSTONE: The flooded fields near Goldsboro, NC (from Hurricane Fran), hosted nine Turnstones Sept. 13 (Eric Dean), a noteworthy total for an inland location.

SANDERLING: Some inland reports included four at Lake Marion, SC, Sept. 7 (Lex Glover) and three at Rocky Mount, NC, Sept. 15 (Ricky Davis).

SEMIPALMATED SANDPIPER: Five were locally uncommon at Hooper Lane, Henderson County, NC, Sept. 8 (Wayne Forsythe, Simon Thompson, Larry Farer).

WESTERN SANDPIPER: Two were rare at Hooper Lane, Henderson County, NC, Sept. 8 (Wayne Forsythe *et al.*).

WHITE-RUMPED SANDPIPER: Inland reports included one at Lake Hartwell, Pickens County, SC, Sept. 11 (Pete Worthington), one near Rocky Mount, NC, Sept. 15 (Ricky Davis), and one near Durham, NC, Oct. 10 (Jeff Pippen).

BAIRD'S SANDPIPER: Sightings of this peep are always noteworthy in the Carolinas. This fall, single birds were found at Townville, SC, Aug. 25 (Bob Maxwell *et al.*); the Bucksport, SC, sod farm Sept. 7 (Jack Peachey); Hooper Lane, Henderson County, NC, Sept. 8 (Wayne Forsythe, Simon Thompson, Larry Farer); the Orangeburg, SC, sod farm Sept. 13 (Simon Thompson); and at Beaufort, SC, Sept. 19 (Thompson).

DUNLIN: A good count of 5,160 was had at the Savannah Spoil Site, SC, Nov. 22 by Steve Calver.

STILT SANDPIPER: This species was found in average numbers this fall. The best total received for an inland site was 75+ in the flooded fields near Goldsboro, NC, Sept. 12 (Eric Dean).

BUFF-BREASTED SANDPIPER: In the Carolinas, this species had one of its best migrations in many years. The Orangeburg, SC, sod farm had birds present from late August through September. The peak count there was 8 on the 7th (Lex Glover). The Ridgeland, SC, sod farm had 3-4 present Sept. 21-22 (Simon Thompson; Lex Glover *et al.*; Bob & Barbara Maxwell). Elsewhere in South Carolina, two were at the Savannah Spoil Site Sept. 13 (Steve Calver), one was at Huntington Beach State Park Sept. 14 (Simon Thompson), and one was at the Columbia Metro Wastewater Plant Sept. 22 (Glover *et al.*). In North Carolina, one was at Cape Hatteras point Aug. 25 (C. & K. Bennett); 4-6 were rare for the mountains at Hooper Lane, Henderson County Sept. 8 (Wayne Forsythe, Simon Thompson, Larry Farer); and 3 were near Goldsboro Sept. 12-15 (Eric Dean).

RUFF: The always exciting Ruff was found twice: one was at Bodie Island Lighthouse Pond, NC, Aug. 23 (Roger McNeill, Les Todd, Leto Copeley, Bert Fisher), and one was at the Savannah Spoil Site, SC, on the late date of Nov. 9 (Steve & Will Calver).

SHORT-BILLED DOWITCHER: This species is a regular inland fall migrant. The most interesting report this season was of one far to the west at Hooper Lane, Henderson County, NC, Sept. 8 (Wayne Forsythe, Simon Thompson, Larry Farer).

LONG-BILLED DOWITCHER: Noteworthy sightings included three at Santee N.W.R., SC, Oct. 20 (Robin Carter, Caroline Eastman) and another three at Goldsboro, NC, Nov. 9 (Eric Dean).

WILSON'S PHALAROPE: Rare inland reports consisted of one near Goldsboro, NC, Sept. 4 (Eric Dean), an impressive 12 at Latta, Dillon County, SC, Sept. 6 (Lex Glover), and one near Rocky Mount, NC, Sept. 15 (Ricky Davis). Coastal Wilson's included three at Pea Island N.W.R., NC, Aug. 10-12 (Jeff Lewis, Paul Guris *et al.*) and an excellent 21 at the Savannah Spoil Site, SC, Aug. 21 (Steve Calver).

RED-NECKED PHALAROPE: Always rare on land, one was at the Cape Hatteras, NC, campground Oct. 8 ((Brian Patteson). Also 85 out of Oregon Inlet, NC, Aug. 17 (Mike Tove *et al.*) was a good total for that early in the fall.

POMARINE JAEGER: One was unusual on the beach at Cape Hatteras point Aug. 2 (Brian Patteson). Also 13 was a good total on a pelagic trip out of Hatteras Sept. 29 (Patteson *et al.*).

PARASITIC JAEGER: Sightings of this species from shore included individuals at Cape Hatteras, NC, Sept. 28 and Oct. 8 (Brian Patteson) and at Huntington Beach State Park, SC, Nov. 30 (Jack Peachey, Bob Maxwell).

LONG-TAILED JAEGER: Good counts on several pelagic trips out of Hatteras included 5 on Aug. 24 & 25, and 6 on Sept. 29 (Patteson *et al.*). One was much rarer from land when at Cape Hatteras point Sept. 28 (Patteson *et al.*).

SKUA SP. Only one skua was seen this fall. An unidentified skua was off Hatteras Aug. 24 (Patteson *et al.*).

FRANKLIN'S GULL: An adult in winter plumage was seen well at Lake Auman, Moore County, NC, Nov. 1 by Dick & Lois Dole. It had been several years since this species had been found in the Carolinas, and this individual easily provided a first local record.

CALIFORNIA GULL: An adult was found at Cape Hatteras, NC, Nov. 30 (John & Paula Wright, *sev. ob.*). This represents the fourth winter in a row that the species has been observed there.

HERRING GULL: A very unusual occurrence was the Herring Gull seen at Carver's Gap, Roan Mountain, NC, Sept. 23 (Rick Knight). This species is rarely seen in the mountains, especially at such an elevation.

GLAUCOUS GULL: A second-winter plumaged Glaucous was found at Cape Hatteras, NC, Nov. 30 (sev. ob.), and it remained through the winter.

SABINE'S GULL: The always exciting Sabine's Gull was found off of Hatteras, NC, Sept. 29 (Brian Patteson *et al.*) for a rare report.

ROYAL TERN: Interesting inland (non-storm related) sightings included one at Lake Gaston, NC, Aug. 4 (Ricky Davis) and one at Lake Auman, Moore County, NC, Sept. 29 (Dick & Lois Dole).

ROSEATE TERN: The only report received was of three at Cape Hatteras point Aug. 2 (Brian Patteson).

COMMON TERN: A count of 75+ was impressive at Lake Auman, NC, Sept. 29 (Dick & Lois Dole). Also locally noteworthy was the individual at Lake Osceola, Henderson County, NC, Sept. 5 (Wayne Forsythe, I. Weigley). Another good count was the 375 off of Hatteras Sept. 29 (Brian Patteson *et al.*).

FORSTER'S TERN: An excellent local count was the 20+ at Lake Auman, NC, Sept. 29 (Dick & Lois Dole), part of a large assemblage of migrant terns at that lake that day.

BRIDLED TERN: Bridleds were in good numbers offshore this fall. The best counts included 27 off Hatteras Aug. 3 (Brian Patteson *et al.*), 20 off Oregon Inlet Aug. 12 (Todd McGrath *et al.*); and 28 off Hatteras Aug. 25 (Patteson *et al.*). Much rarer was one seen from shore at Cape Hatteras Oct. 8 (Brian Patteson), just after passage of Tropical Storm Josephine.

SOOTY TERN: The best offshore total was 13 off Hatteras Aug. 10 (Brian Patteson *et al.*). Also one was seen from shore at Avon, NC, Aug. 1 (B. Taber).

BLACK TERN: Black Terns staged one of their better fall migrations through the Carolinas this year. Peak inland counts included 125 near Goldsboro, NC, Sept. 12 (Eric Dean), 34 at Falls Lake, NC, Sept. 12 (Jeff Pippen), and 29 at the Georgetown, SC, sewage lagoons Sept. 14 (Robin Carter, Caroline Eastman). The best offshore total was the 139 out of Hatteras Aug. 25 (Brian Patteson *et al.*).

RAZORBILL: Slightly early were two Razorbills at Figure Eight Island, NC, Nov. 30 (Derb Carter). Would this foretell of a good winter for alcids?

EURASIAN COLLARED-DOVE: A new colony has been established in West Columbia, SC (Robin Carter), where at least four have been present since the spring. Also seven were at Edisto Beach, SC, Sept. 1 (Sid Gauthreaux, Carroll & Ritchie Belser).

WHITE-WINGED DOVE: This species has become annual the last couple of years in the Carolinas. This fall individuals were found at Litchfield Beach, SC, Nov. 3 (Bob & Barbara Maxwell) and at Pea Island N.W.R., NC, also on Nov. 3 (John Wright *et al.*).

SHORT-EARED OWL: This species arrived at Huntington Beach State Park, SC, during November, and up to four were seen on several occasions (sev. ob.).

SAW-WHET OWL: Frank Enders once again netted Saw-whets in Halifax County, NC, this fall. A total of five different individuals were netted Nov. 10-29. This is nothing compared to last year's record invasion, but still was noteworthy for the Carolinas.

RUBY-THROATED HUMMINGBIRD: An excellent one-day total was the 30+ seen in Jackson Park, Hendersonville, NC, Sept. 4 (Wayne Forsythe).

NORTHERN FLICKER: A good local count was the 45 seen passing through Carver's Gap, Roan Mountain, NC, Oct. 4 by Rick Knight.

EASTERN WOOD-PEWEE: The Jackson Park, Hendersonville, NC, area had a large number of this species Oct. 4 when Simon Thompson counted 20+ there.

YELLOW-BELLIED FLYCATCHER: The only report received was of one at Wilmington, NC, Sept. 15 (Gail Whitehurst).

WILLOW FLYCATCHER: The only "Traill's" empidonax flycatcher identified to species was the Willow found at Patriot's Point, SC, Oct. 5 (Lex Glover, Mike Turner).

LEAST FLYCATCHER: There were several Leasts found this fall. One was near Chapel Hill, NC, Aug. 28 (Will Cook), one was at the Bucksport, SC, sod farm Sept. 1 (Jack Peachey), and two were found at the north end of Pea Island, NC, Sept. 14 (Jeff Lewis).

WESTERN KINGBIRD: This species has been harder to come by the last couple of years. Only two this fall: one was at Pea Island N.W.R., NC, Oct. 26 (Rick Payne), and one was at Willowbrook Plantation, SC, Nov. 30 (Herb Hendrickson *et al.*).

GRAY KINGBIRD: Always exciting anywhere in the Carolinas, one was at Buckhall Landing Campground, Awendaw, Charleston County, SC, Aug. 22 (Bob & Barbara Maxwell).

SCISSOR-TAILED FLYCATCHER: This species is now annual in the Carolinas. This fall's token bird was found in Georgetown County, SC, Sept. 26 (Wendy Allen *et al.*) and was observed until at least Oct. 5 (Lex Glover *et al.*).

HORNED LARK: The Hooper Lane area near Mills River, Henderson County, NC, often harbors good numbers of this species. This fall the flock totaled at least 150 by late November (Simon Thompson, Wayne Forsythe). Also

noteworthy was the sighting of 53 larks in a field at Rocky Mount, NC, Aug. 3 (Rick Davis). This is a good count for that time of year, and the flock consisted of 17 adults and 36 flightless young!

NORTHERN ROUGH-WINGED SWALLOW: One was extremely late at Goldsboro, NC, Nov. 16 as noted by Eric Dean.

BANK SWALLOW: Eighteen at Carver's Gap, Roan Mountain, NC, Aug. 30-Sept. 1 (Rick Knight) provided a locally rare sighting.

CLIFF SWALLOW: Five Cliffs associating with the previously mentioned Rough-wingeds at Carver's Gap Aug. 30-Sept. 1 were also quite rare there, providing that observer's second local record (Knight).

BARN SWALLOW: One was slightly late at Savannah N.W.R., SC, Nov. 3 (Paul Johnson).

COMMON RAVEN: Six seen during the fall hawkwatch at Mountain View Overlook, Kerr Scott Reservoir, NC, (*fide* Adam Martin), was a good total for that location.

TUFTED TITMOUSE: Two at Carver's Gap, Roan Mountain, NC, Sept. 30 and again Oct. 16-17 (Rick Knight) were quite unusual at that (5200') elevation.

HOUSE WREN: One was singing near Stumpy Pt., Dare County, NC, Aug. 6-7 (John Fussell). This species is uncommon during the summer that far east.

SEDGE WREN: One was a good find at Jackson Park, Hendersonville, NC, Oct. 5 (Wayne Forsythe, Simon Thompson).

MARSH WREN: Jackson Park also hosted a Marsh Wren Sept. 18 (Thompson, Larry Farer).

THRUSHES: The best counts of migrant thrushes included 20+ Veeries at Beaufort, SC, Sept. 20-22 (Pete Worthington); two Gray-cheekeds at Pea Island N.W.R., NC, on the late date of Nov. 3 (Dave Kaminski, Brad Carlson, Ken Harrell, John Wright); and 15 Swainson's at Litchfield Beach, SC, Sept. 15 (Robin Carter, Caroline Eastman). Also late was a Swainson's at Wilmington, NC, Nov. 12 (Gail Whitehurst). And finally, the only report received of a Bicknell's Thrush came from Beaufort, SC, when one was well-studied Sept. 20 (Pete Worthington).

GRAY CATBIRD: One was late in eastern Rutherford County, NC, Nov. 27 (JoAnn Martin). This species usually is found only in the Coastal Plain and coastal areas in winter.

BROWN THRASHER: One to two spent the fall period at Carver's Gap, Roan Mountain, NC, (Rick Knight), unusual at that elevation.

WARBLING VIREO: There were four reports of this rare migrant in the Carolinas this fall. Single birds were found at Huntington Beach State Park, SC, Sept. 18 (Jack Peachey); Jordan Lake, NC, Sept. 21 (Jeff Pippen); Salvo,

NC, Sept. 25 (Henry & Elizabeth Link); and Lake Phelps, NC, Oct. 5 (Ricky Davis).

PHILADELPHIA VIREO: Continuing the trend for the last several years, reports of this species are increasing. Reports spanned the period Sept. 20 to Oct. 6 from the mountains to the coast. The best totals included four at Price Park along the Blue Ridge Parkway, NC, Sept. 29 (Merrill & Ida Lynch, Derb Carter) and 2-3 at the north end of Roanoke Island, NC, over several days during September and October (Jeff Lewis, John Fussell, Bob Holmes, Ricky Davis).

BLUE-WINGED WARBLER: The best counts included three at Jackson Park, Hendersonville, NC, Sept. 3 (Wayne Forsythe, Simon Thompson, Larry Farer) and three different individuals on Roanoke Island, NC, Sept. 18-23 (Jeff Lewis).

GOLDEN-WINGED WARBLER: An excellent one-day total of four was at Saluda Hills, Lexington County, SC, Sept. 19 as noted by Lex Glover. Also of note, one was at Beaufort, SC, Sept. 20 (Simon Thompson), and one was on Roanoke Island, NC, Sept. 23 (Jeff Lewis).

"LAWRENCE'S" WARBLER: Of the two hybrids of Blue-winged & Golden-winged Warblers, the "Lawrence's" is much rarer. This fall, surprisingly, there were two reports. One was at Jackson Park, Hendersonville, NC (Wayne Forsythe, Simon Thompson, Larry Farer), and one was at Roanoke Island, NC, Sept. 18 (Jeff Lewis, Don Perry).

ORANGE-CROWNED WARBLER: One was slightly early at the Bucksport, SC, sod farm Sept. 14 (Jack Peachey).

NASHVILLE WARBLER: Nashville Warblers were found throughout the Carolinas in excellent numbers; reports too numerous to mention. This was not the case several years ago! Highlights included three at Jackson Park, Hendersonville, NC, Oct. 4 (Simon Thompson); three at New Bern, NC, Oct. 11 (Bob Holmes), and an amazing 12 on Roanoke Island, NC, from Sept. 2 to Oct. 11, including three on Sept. 18 & Oct. 9 (Jeff Lewis).

NORTHERN PARULA: An impressive 75-100 were seen along a ½ mile walk at New Bern, NC, Oct. 9 (Bob Holmes).

CHESTNUT-SIDED WARBLER: Excellent counts of this warbler involved 20+ at Jackson Park, NC, Sept. 11 (Simon Thompson) and 10 sightings at Roanoke Island, NC, Aug. 29 - Oct. 5 (Jeff Lewis). Also one was quite late at Simpsonville, SC, Nov. 2 (Pete Worthington).

MAGNOLIA WARBLER: The presence of 40 individuals at Jackson Park, NC, Sept. 29 (Wayne Forsythe, Simon Thompson, Larry Farer) was truly exceptional.

CAPE MAY WARBLER: Two were slightly late at Simpsonville, SC, Nov. 2 (Pete Worthington).

BLACK-THROATED BLUE WARBLER: Worthington had a male at Simpsonville, SC, Nov. 2 along with several other late warblers.

BLACKBURNIAN WARBLER: Impressive were the nine sightings at Roanoke Island, NC, Sept. 18 - Oct. 10 (Jeff Lewis). This species is normally hard to find along the coast. Also four at Jackson Park, NC, Oct. 1 (Simon Thompson) was a good count. One was in the flock of late warblers at Simpsonville, SC, Nov. 2 (Worthington), providing a rare November record.

BAY-BREASTED WARBLER: One was late at Simpsonville, SC, Nov. 2 (Worthington). What was going on there that day with all the late warblers? Also a count of 15 at Jackson Park, NC, Oct. 3 (Simon Thompson) was quite noteworthy.

BLACKPOLL WARBLER: One was banded at Carver's Gap, Roan Mountain, NC, Oct. 4 (Rick Knight) for a rare mountain fall record. And again, one was in the Simpsonville, SC, late warbler flock Nov. 2 as noted by Pete Worthington.

CERULEAN WARBLER: The only reports received included one in Durham County, NC, Aug. 25 (Will Cook), one at Jackson Park, NC, Sept. 4 (Simon Thompson), and 1-2 at Lugoff, SC, Sept. 14-15 (Lex Glover).

AMERICAN REDSTART: Slightly late redstarts were one at Simpsonville, SC, Nov. 2 (Worthington) and one at Savannah N.W.R., SC, Nov. 3 (Ray Chandler *et al.*).

WORM-EATING WARBLER: Interesting reports included one at an unusually high elevation at Carver's Gap, NC, Sept. 9 & 25 (Rick Knight) and one on Roanoke Island, NC, Oct. 1 (Jeff Lewis).

KENTUCKY WARBLER: Two were banded at Carver's Gap, NC, Sept. 19 (Knight), a locally unusual record. On North Carolina's Outer Banks, this species was reported more than usual. One was early at Pea Island N.W.R. Aug. 14, and one was on Roanoke Island Sept. 2 (Jeff Lewis). Also another was at Pea Island Oct. 4 (Bob Holmes).

CONNECTICUT WARBLER: This rare warbler was present at Jackson Park, Hendersonville, NC, Oct 4-6, when 1-2 were seen by Wayne Forsythe, Simon Thompson, Larry Farer, Taylor Piephoff, and Keith Camburn.

MOURNING WARBLER: The very rare Mourning was found twice: one was in southeast Pitt County, NC, Aug. 17 (Jeff Lewis), and one was at Bucksport, Horry County, SC, Sept. 14 (Jack Peachey, Caroline Eastman).

HOODED WARBLER: One was late on Bogue Banks, NC, Nov. 2 as noted by Bob Holmes.

WILSON'S WARBLER: Reports included one in Durham, NC, Aug. 31 (Len Pardue); from 2-5 on Roanoke Island, NC, Sept. 14-23 (John Fussell, Jeff Lewis); one at Rodanthe, NC, Sept. 15 & 18 (John Fussell, Ricky Davis); one at Pea Island N.W.R., NC, Sept. 24 (Henry & Elizabeth Link); and one at Harbor Island, SC, Oct. 9 (Judy & George Halleron).

CANADA WARBLER: Single Canadas were seen on Roanoke Island, NC, Aug. 26, Sept. 18, and Oct. 9 by Jeff Lewis - a good count for that coastal locality.

ROSE-BREASTED GROSBEAK: An excellent count of 50+ was had at Jackson Park, Hendersonville, NC, Oct. 3 (Wayne Forsythe, Simon Thompson, Larry Farer). Also one was late at Ft. Macon, Carteret County, NC, Nov. 3 (Eric Dean).

INDIGO BUNTING: One was quite late far inland at Winston-Salem, NC, Nov. 4 as noted by Ramona Snively and Regina Burt.

DICKCISSEL: Reports this fall included two at Litchfield Beach, SC, Sept. 14 (Robin Carter, Caroline Eastman), one at Pea Island, NC, Sept. 15 (Russ & Patricia Tyndall, Ricky Davis), and another there Oct. 20 (Davis).

CLAY-COLORED SPARROW: In South Carolina, one was at Huntington Beach State Park Sept. 14 (Simon Thompson). On North Carolina's Outer Banks this species had a very good migration. Single Clay-coloreds were found at Pea Island from Sept. 19 (John Fussell) to Nov. 4 (Mary McDavit). Three were at Pea Island Oct. 6 (Eric Dean), and an amazing 6 different individuals were there Oct. 20 (Ricky Davis *et al.*). At Bodie Island one was found Oct. 21 (Brian Patteson), and at Roanoke Island one was present Oct. 10-11 (Jeff Lewis, John Fussell).

LARK SPARROW: Reports of this regular fall migrant included from one to two at Pea Island, NC, Sept. 2-23 (John Fussell, Jeff Lewis, Brian Patteson), from one to two at Rodanthe, NC, Sept. 15-23 (John Fussell, Ricky Davis, Henry & Elizabeth Link), one along the Morehead City-Beaufort, NC, causeway Sept. 15 (Bob Holmes, Wade Fuller), one at Frisco, NC, Sept. 16 (Pat Moore), one at Folly Beach, SC, Oct. 5 (Lex Glover, Mike Turner), and one at Richlands, NC, Oct. 21 (Nell Moore).

GRASSHOPPER SPARROW: Single individuals were found at Pea Island N.W.R., NC, Nov. 3-4 (Ricky Davis, Mary McDavit) and at the Savannah Spoil Site, SC, Nov. 9 (Steve Calver).

HENSLOW'S SPARROW: This elusive species was observed only in South Carolina this fall. One was at Santee N.W.R. Oct. 26 (Barbara Maxwell); one was at the Savannah Spoil Site Nov. 3 (Ray Chandler *et al.*); one was at Carolina Sandhills N.W.R. Nov. 16 (Peter Range); and one was seen in

Ridgeville, Dorchester County, Oct. 28 (Steve Compton) as it ran on pavement between bushes at the observer's feet!

LECONTE'S SPARROW: The only report was of one at Santee N.W.R., SC, Nov. 4 (Jack Peachey, Bob Maxwell, Paul Rogers).

LINCOLN'S SPARROW: This species was reported in low numbers this fall as compared to past years. One was at Pea Island, NC, Nov. 3 (Ricky Davis), and one was at Jackson Park, Hendersonville, NC, Oct. 6 (Larry Farer) and Oct. 12-13 (Simon Thompson).

LAPLAND LONGSPUR: The only reports included an early one at Jordan Lake, NC, Nov. 10 (Ricky Davis) and a flock of 6-8 at Hooper Lane, Mills River, Henderson County, NC, Nov. 29 (Wayne Forsythe, Simon Thompson, Larry Farer). The latter birds were associating with the large Horned Lark flock present there and were seen on into the winter season.

SNOW BUNTING: This species staged one of its best movements into the Carolinas in recent memory. At Huntington Beach State Park, SC, birds were present from Nov. 16 until the end of the period (m. ob.). From 10-11 were there most days and by Nov. 30, 12 were counted (Robin Carter, Caroline Eastman). At Cape Hatteras, NC, one was present at the campground Nov. 16 (Roger McNeill, Simon Thompson), and one was at the point Nov. 22. One was at Ft. Macon, NC, Nov. 18 (Randy Newman, *fide* John Fussell), and one was at Harbor Island, SC, Nov. 18-21 (George Halleron). And finally an impressive flock of 30 was on Bodie Island, NC, Nov. 29 (Kent Fiala) for the best total.

YELLOW-HEADED BLACKBIRD: The only report was of an immature male at the upper end of 18 Mile Creek, Lake Hartwell, Anderson County, SC, Sept. 8-14 (Sid Gauthreaux, Carroll Belser, Steve Wagner, Bob & Barbara Maxwell, Pete Worthington).

SHINY COWBIRD: One was found along the Huntington Beach State Park, SC, causeway Nov. 23 (Bob & Barbara Maxwell) for the only report. So far this species has not infiltrated the Carolinas in the numbers once feared!

EVENING GROSBEAK: This is definitely not a winter finch year, so of complete surprise was the one report of Evening Grosbeak. A flock of 15 was seen in Chester County, SC, Nov. 9 (Albert Conway, Gail B. Ice), no doubt representing lost birds!

Hurricane Fran Sightings — North Carolina
(JL-Jordan Lake, FL-Falls Lake, CC-Chapel Hill Country Club, HL-Harris Lake, LP-Lake Pinehurst,
LA-Lake Auman, GB-Goldsboro, FV-Fayetteville). All Sept. 6-7, 1996.

SPECIES	JL	FL	CC	HL	LP	LA	GB	FV
Black-capped Petrel	1							
Sooty Shearwater		1						
Audubon's Shearwater	1							
Leach's Storm-Petrel	1				1			
Wilson's Storm-Petrel	3							
Storm-Petrel Sp.	1							
Cattle Egret	6							1
Glossy Ibis								
Black-bellied Plover	15							
Semi-palmated Plover	3						2	
Willet	6						1	
Marbled Godwit	6							
Ruddy Turnstone	4	1						
Sanderling	22						12	
Buff-breasted Sandpiper	1							
Short-billed Dowitcher	1							
Red-necked Phalarope	41	35						
Parasitic Jaeger	1							
Laughing Gull	232	125	110		1	2		1
Great Black-backed Gull	2	1						
Caspian Tern	18	10				8		
Royal Tern	120	15			12	15	6	
Sandwich Tern	15	3					2	
Common Tern	150	35			2	3	10	5
Forster's Tern	75	35	2		12	20	15	5
Least Tern	6	6			1	10	1	
Bridled Tern	4	1				1		
Sooty Tern	1	3		1		2		
Black Tern	35	75	6			12		40
Black Skimmer	6		1	1				

BRIEFS FOR THE FILES

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(All Dates Winter 1996 - 1997)

RED-THROATED LOON: Only one inland report this season; an individual was on Jordan Lake, NC, Feb 6 (Jeff Pippen).

PACIFIC LOON: This rare (but almost regular) species was observed three times during the winter. One was on the Morehead City, NC, C.B.C. Dec. 22 (Mike Tove, Jim O'Donnell, John Hammond); one was on the Wilmington, NC, C.B.C. Jan. 4 (Derb Carter); and one was at Huntington Beach State Park, SC, Jan. 24-25 (Bob Maxwell, Jack Peachey, Pete Worthington, Anne and Vernon Waters, Larry and Carol Eldridge).

PIED-BILLED GREBE: The Savannah Spoil Site, Jasper County, SC, hosted excellent numbers of this species. An impressive 871 were found on Dec. 5 by Steve Calver.

RED-NECKED GREBE: Reports of this rare grebe included up to five in the Cape Hatteras, NC, area in late December through February (m. ob.). There was a flock of seven on the Morehead City, NC, C.B.C. Dec. 22 (Tove *et al.*), and one was on the Southport, NC, C.B.C. Jan. 5 (Derb Carter). In South Carolina, four were at Huntington Beach State Park Jan. 12 (Robin Carter, Caroline Eastman). The only inland report was of one at Falls Lake, NC, Jan. 26 (Ricky Davis).

EARED GREBE: There was a group of these grebes at the Goldsboro, NC, wastewater treatment plant ponds again, with the peak count being nine Dec. 29 (Eric Dean). Three were at the Savannah Spoil Site, SC, Feb. 24 (Steve Calver), and two were at Cape Hatteras, NC, Feb. 8 (m. ob.). Other reports included two at Baldhead Island, NC, Jan. 5 (Derb Carter) and one inland at Lake Norman, NC, Dec. 22 (David Wright, Judy Walker).

WESTERN GREBE: One was found in the surf at Cape Hatteras, NC, on Feb. 8 (Paul Lehman *et al.*, m. ob.) for only about the 5th good record for the state.

NORTHERN FULMAR: An impressive total of 200+ was seen on the pelagic trip out of Hatteras, NC, Feb. 9 (Brian Patteson *et al.*). This was one of the best counts ever for this species in the Carolinas, and surprisingly many observers on board felt many more were actually encountered that day!

GREATER SHEARWATER: One out of Hatteras, NC, Feb. 9 (Patteson *et al.*) provided a rare winter sighting.

SOOTY SHEARWATER: This species is normally absent from the western North Atlantic during the winter. Thus of note were two reports: 2-3 were found offshore during the Hatteras pelagic trip Feb. 9 (Patteson *et al.*), and one was seen from shore at Wrightsville Beach, NC, Jan. 3 (Ricky Davis). There are only a couple of previous winter records from the Carolinas.

MANX SHEARWATER: The only sighting was of one out of Hatteras Feb. 9 (Patteson *et al.*).

AMERICAN WHITE PELICAN: One was at the Savannah Spoil Site, SC, Dec. 5 (Steve Calver) for the only winter report.

BROWN PELICAN: One was unusual inland at the Lake Moultrie spillway, Berkeley County, SC, Feb. 8 (Robin Carter).

DOUBLE-CRESTED CORMORANT: Cormorants continue to increase in the Carolinas. A count of 300 on the Jordan Lake, NC, C.B.C. Jan. 5 (*vide* Barbara Roth) was impressive for an inland site. Also a new coastal congregation was found in the Beaufort Inlet area when 30,000+ were on the Morehead City, NC, C.B.C. Dec. 22 (*vide* John Fussell). Were these birds part of the normally huge Ocracoke-Hatteras flock? Also one in flight near Ecusta, Transylvania County, NC, Dec. 25 (Tom Joyce, *vide* Norma Siebenheller) was rare for the mountains in winter.

ANHINGA: Rare winter reports included singles at New Bern, NC, Dec. 20 (John Fussell), one on the Wayne County, NC, C.B.C. Dec. 21 (Eric Dean), and one at Emerald Isle, NC, in early December (*vide* John Fussell).

LEAST BITTERN: Very rare winter sightings of this elusive species involved singles at Huntington Beach State Park, SC, Jan. 12 (Robin Carter, Caroline Eastman) and Ocracoke Island, NC, Jan. 19 (Keith Camburn, Brainard Palmer-Ball, Ron Cicerello). Very little is known of just how many attempt to winter in the Carolinas each year.

GREAT EGRET: An unusual winter report involved three Greats wintering inland at Lake Blalock, Spartanburg County, SC, (*vide* Lyle Campbell). Also one was probably an early migrant at Lake Crabtree, Wake County, NC, Feb. 23 (Ricky Davis).

CATTLE EGRET: Always noteworthy in winter, an amazing 16 were on the Morehead City, NC, C.B.C. Dec. 22 (*vide* John Fussell). Also an impressive count of nine was had on the New Bern, NC, C.B.C. Dec. 20 (John Fussell) and one was on the Wilmington, NC, C.B.C. Jan. 4 (*vide* Sam Cooper).

GREEN HERON: One was rare on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (*vide* Paul Sykes). Also of note were singles at Savannah N.W.R., SC, Jan. 13 (Pete Worthington) and Bear Island W.M.A., SC, Feb. 1 (Anne Waters). Inland one was quite rare near Pauline, Spartanburg County, SC, Dec. 31 (Ken Pearson, *vide* Lyle Campbell).

GLOSSY IBIS: An immature Glossy found in Pitt County, NC, Jan. 26 (Brad Carlson, Ken Harrell) provided a very rare inland winter sighting.

WOOD STORK: One lingered exceptionally late at Sunset Beach, NC, when one was still there Dec. 12 as noted by Diane Hahn. Also, one was over Harbor Island, SC, Jan. 23 for an unusual winter report (George and Judy Halleron).

FULVOUS WHISTLING-DUCK: The only report received was of one on the Kitty Hawk, NC, C.B.C. (*fide* Lee Yoder).

GREATER WHITE-FRONTED GOOSE: This species staged what must have been a record invasion into the Carolinas! Some of the more amazing reports included a flock of 12 near Concord, NC, Feb. 16 (Taylor Piephoff); up to eight near Townville, SC, late January to early February (Steve and Freda Mitchell, Bob and Barbara Maxwell); six in the Lake Landing area of Lake Mattamuskeet, NC, Dec. 29 (Ricky Davis) with at least one still there Feb. 22 (Rich Boyd); up to five near Lenoir, Caldwell County, NC, during January (Jim and Caroline Wagner, Taylor Piephoff); and three at Santee N.W.R., SC, late December (Lex Glover, *sev. ob.*). Also one was at Savannah N.W.R., SC, Jan. 11 (Steve Calver), and another was in the Lake Wanteska - Deerlake areas of Transylvania County, NC, Jan. 18 until March (Bill Shank, Betty McIlwain, Norma Siebenheller, *sev. ob.*). One wonders if this species appeared in these numbers in other areas of the East this winter.

SNOW GOOSE: This species was also widespread this winter. Some good totals included the twelve at Santee N.W.R., SC, Dec. 30 (Lex Glover) and ten at the Savannah Spoil Site, SC, Jan. 10 (Steve Calver). Other noteworthy reports involved birds in the western parts of the Carolinas, including singles on the Spartanburg, SC, C.B.C. Jan. 4 (Lyle Campbell *et al.*); Lake Julian, Buncombe County, NC, Jan. 19 (Wayne Forsythe); Townville, SC, Feb. 15 (Steve and Freda Mitchell); and at Casar, Cleveland County, NC, Feb. 27 (Pat Wilkison).

ROSS'S GOOSE: The Ross' Goose also staged a record movement into the Carolinas this winter. Seven were on the Lake Mattamuskeet, NC, C.B.C. Dec. 29 (*fide* Allen Bryan). The flock grew to ten birds by Feb. 7 (Will Cook *et al.*), and at least one was still there Feb. 22 (Rich Boyd). This was easily a record total for the Carolinas, at least doubling the previous count! And alongside these birds, another flock of five was at the usual Pungo N.W.R., NC, site Jan. 19 (Haven Wiley *et al.*). Other very rare reports included one at Santee N.W.R., SC, in late December (*sev. ob.*) and one at Deerlake, Transylvania County, NC, Jan. 5 until at least late February (Tom Joyce, Becky and John Huggins, *sev. ob.*).

“EURASIAN” GREEN-WINGED TEAL: This rare, easily overlooked form was found on the Lake Mattamuskeet, NC, C.B.C. Dec. 29 (Ricky Davis), for the only report.

BLUE-WINGED TEAL: Rare inland in winter, noteworthy sightings included two at Cane Creek Res., Orange County, NC, Dec. 4 (Eric Barnhardt, *fide* Jeff Phippen), two on the Raleigh, NC, C.B.C. Dec. 21 (*fide* Susan Campbell), and one at Lake Orange, Orange County, NC, Jan. 3 (Jeff Phippen).

CINNAMON TEAL: The male found at Bodie Island Lighthouse Pond on the Outer Banks during the fall remained until early December (Jeff Lewis). It disappeared for awhile and then was relocated at North Pond, Pea Island N.W.R. in mid January for several days before disappearing for good (m. ob.).

EURASIAN WIGEON: Winter reports of this species are always noteworthy, especially when away from the usual NC Outer Banks areas. A male showed up at a pond near Lake Wheeler, Wake County, NC, for the third year in a row when it was found on the Raleigh C.B.C. Dec. 21 (Kent Fiala, Diane Hardy, John Connors). Two were at Lake Mattamuskeet, NC, Dec. 29 (Ricky Davis), and two were at Bear Island W.M.A., SC, in early February (Anne Waters, Jack Peachey, m. ob.). Also one was again found on North Pond, Pea Island N.W.R., NC, Jan. 18 (John and Paula Wright, Brad Carlson, Jodi Nicholson *et al.*).

REDHEAD: Some excellent counts of this species included 3800 on the Morehead City, NC, C.B.C. Dec. 22 (*fide* John Fussell), 3020 on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (*fide* Paul Sykes), 31 at the Savannah Spoil Site, SC, Dec. 21 (Steve Calver), and 25 at Deerlake, Transylvania County, NC, Feb. 28 (Betty McIlwain).

RING-NECKED DUCK: A count of 9000 on Middleton Pond, Georgetown County, SC, during the winter (Jack Peachey *et al.*) was impressive even for this common species.

GREATER SCAUP: This species is normally found in small numbers in the Carolinas. This year there were the usual scattered reports of small numbers. One exception was the flock in the Lake Crabtree - Brier Creek Res. area of Wake County, NC, where up to 50 were found from late January until March (Jeff Phippen, Harry LeGrand, m. ob.).

COMMON EIDER: There were more reports than normal this winter. Some of the better counts included an impressive eight on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (*fide* Paul Sykes); three on the Cape Hatteras, NC, C.B.C. Dec. 27 (*fide* Harry LeGrand); two at Fort Fisher, NC, Jan. 5 (Ricky Davis), and two at Huntington Beach State Park, SC, during the winter (m. ob.). Others noted were singles at Wrightsville Beach, NC, Jan. 4 (Derb Carter); Carolina Beach, NC, Jan. 4 (Ricky Davis); Morehead City, NC, Jan. 8 until late February (John

Fussell, Harry LeGrand, sev. ob); Emerald Isle, NC, Jan. 24 until February (Nell Moore, sev. ob.); and Sullivan's Island, SC, Jan. 27 (Rick Murray *et al.*). KING EIDER: An individual of this rare species was found on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (*fide* Paul Sykes).

OLDSQUAW: Rare inland reports of this coastal duck included an impressive flock of seven at Jordan Lake, NC, Dec. 15 (Pat Coin, Rob Gluck *et al.*); two at Charlotte, NC, late December to early January (David Wright, Taylor Piephoff, sev. ob.); one on Lake Townsend, NC, Dec. 21 (Herb Hendrickson, Peggy Ferebee); and possibly the same bird at a pond in southern Guilford County, NC, in late January (Lynne Moseley *et al.*). Other good records involved birds in South Carolina, where the species is much harder to come by. Two were at Huntington Beach State Park Jan. 23 (Barbara Maxwell), and one was in the Pee Dee River at the US 17 bridge Jan. 25 (Anne and Vernon Waters, Larry and Carol Eldridge).

INLAND SCOTERS: A Surf was on WoodLake, Moore County, NC, in December (Marion and Dick Burk *et al.*), and two Blacks were on Roanoke Rapids Lake, NC, Dec. 8 as noted by Ricky Davis.

HOODED MERGANSER: An impressive count of 1300 was had at the Savannah Spoil Site, SC, Dec. 5 (Steve Calver).

COMMON MERGANSER: The best count of this species was eight at Roanoke Rapids Lake, NC, December to February (Ricky Davis), a usual wintering area. There were other reports of from one to two birds in several North Carolina areas. Also there was no report from Lake Phelps, NC, where a huge flock has wintered in the past.

RUDDY DUCK: Large numbers were found at a couple of areas this winter. There were 1505 on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (*fide* Paul Sykes) and 1778 at the Savannah Spoil Site, SC, Jan. 10 (Steve Calver). Also in the mountains, where much harder to come by; there were 11 on Lake Toxaway in early January (June Humphrey, *fide* Norma Siebenheller), providing an unusual local record.

RED-TAILED HAWK: A rare sighting was provided by a melanistic Red-tailed near Hendersonville, NC, Dec. 13-14 (Wayne Forsythe, Simon Thompson). Most reports concerning abnormal color involve leucistic or albinistic individuals, but observers should remember to check for some of the dark races found in the western US.

GOLDEN EAGLE: Two adults were near Lake Toxaway, NC, Dec. 1 (Doc Murphy, *fide* Norma Siebenheller), and one immature was in Transylvania County, NC, in late December (Clyde Osborne, *fide* Siebenheller) for the only (but expected) mountain reports. Much rarer in the coastal region was the immature at Bear Island W.M.A., SC, Feb. 1 (Anne Waters).

MERLIN: Some of the better inland reports included two at Southern Pines, NC, during the winter (Marion and Dick Burk), one in northern Mecklenburg County, NC, Dec. 14 - Jan. 2 (Taylor Piephoff), and one at Hooper Lane, Henderson County, NC, Dec. 13-14 (Wayne Forsythe, Simon Thompson).

YELLOW RAIL: The only report of this elusive winter resident involved one flushed at the Bodie Island Lighthouse Pond Dec. 28 (Mel Baughman, *vide* Paul Sykes).

VIRGINIA RAIL: A record count of 65 was had on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (*vide* Paul Sykes).

SORA: One was at Jackson Park, Hendersonville, NC, Jan. 21-23 (Ben and Carol Ringer, Wayne Forsythe) for a rare local record.

PURPLE GALLINULE: One at Pinckney Island N.W.R., SC, Feb. 19 (William Carlson, *vide* Brad Carlson) provided a rare winter sighting of this species.

AMERICAN COOT: This species has been reported in increasing numbers from areas across the Carolinas. The count of 4170 on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (*vide* Paul Sykes) was the highest ever for that count. Will this trend continue next year? What is behind this increase?

SANDHILL CRANE: There were two reports this winter: one was in Clarendon County, SC, late December (Tom Hankins) into early January (Robin Carter, Caroline Eastman, Lex Glover, m. ob.), and one was in a field south of the Roanoke River in Halifax County, NC, Feb. 17 (Mike Schultz).

AMERICAN GOLDEN-PLOVER: A late fall migrant was found near Lake Mattamuskeet, NC, Dec. 1 (Eric Dean).

WILSON'S PLOVER: One was at Bird Shoal near Morehead City, NC, Dec. 25 - Jan. 25 (John Fussell). This is the only place where they are known to winter in the Carolinas.

AMERICAN AVOCET: Two spent much of December to February at a spoil pond on the Morehead City - Beaufort, NC, causeway (Eric Dean, m. ob.), a locally unusual report.

GREATER YELLOWLEGS: A good count away from the coast was the 56 at the Hemingway ponds, Williamsburg County, SC, Dec. 4 (Jack Peachey, Paul Rogers).

SPOTTED SANDPIPER: Rare in winter were one at Morehead City, NC, Jan. 25 (Nell Moore *et al.*) and one at Landsford Canal State Park, SC, Feb. 16 (Albert Conway).

LONG-BILLED CURLEW: The Fort Fisher, NC, individual was again found this winter on Jan. 5 (Ricky Davis). One was also found on the Morehead City, NC, C.B.C. Dec. 22 (Sam Cooper).

STILT SANDPIPER: Once again a wintering flock was present at the Savannah Spoil Site, SC. Their numbers fluctuated from 25 on Dec. 5 to one

on Jan. 10 and back up to 64 on Feb. 24 (Steve Calver). This is apparently the farthest north that the species winters. Much more unexpected was the single Stilt Sandpiper found on the Lake Mattamuskeet, NC, C.B.C. Dec. 29 (Ricky Davis), providing one of only a handful of winter records for that state.

GREAT SKUA: A pelagic trip out of Hatteras, NC, Feb. 9 reported a record total of 10 Great Skuas (Brian Patteson *et al.*). Even if there were some duplication, it still blows the old count of 2-3 right out of the water! Was this an unusual event, or does this happen in other years? More winter pelagic trips are needed to answer that question.

LAUGHING GULL: A Laughing on the Greenville, NC, C.B.C. Jan. 5 (Harry LeGrand) provided a rare winter report away from the immediate coast.

LITTLE GULL: The best report involved one at the Savannah Spoil Site, SC, Dec. 9 & 21 (Steve Calver), providing a very rare sighting for that state. In North Carolina, reports came from the Outer Banks as usual, with the best totals being four at Cape Hatteras Feb. 8 (m. ob.) and three on the Hatteras pelagic trip Feb. 9 (Patteson *et al.*).

BLACK-HEADED GULL: An adult Black-headed was at Cape Hatteras from Dec. 27 (Ricky Davis, Allen Bryan) until at least Jan. 19 (Keith Camburn, Brainard Palmer-Ball, Ron Cicerello). Also a 1st -winter bird was there Jan. 11 (Jeff Lewis, Pat Moore).

CALIFORNIA GULL: The Cape Hatteras, NC, area once again hosted this species. Two birds (1 adult, 1 first-winter) were present throughout the winter (m. ob.).

THAYER'S GULL: The only report received was of one adult on the Cape Hatteras, NC, C.B.C. Dec. 27 as noted by Derby Carter.

ICELAND GULL: At least three were found in the Cape Hatteras area this winter. Two 1st-winter birds were seen during January until early February (m. ob.), and one adult was seen Jan. 23 (Taylor Piephoff).

LESSER BLACK-BACKED GULL: Good reports away from the usual Outer Banks areas included four on the Wilmington, NC, C.B.C. Jan. 4 (*vide* Sam Cooper) and one inland on the Raleigh, NC, C.B.C. Dec. 21 (Derby Carter).

GLAUCOUS GULL: Two immatures were present in the Cape Hatteras area all winter (m. ob.), and one was at Pea Island N.W.R. Dec. 14 (Bert Fisher). Rarer sightings included a 1st-winter bird at the Horry County, SC, landfill Dec. 6-7 (Jack Peachey, Paul Rogers, Robin Carter, Caroline Eastman, Lex Glover) and a 2nd-winter at Myrtle Beach, SC, Jan. 21 (*vide* Jack Peachey).

GREAT BLACK-BACKED GULL: The Triangle area of North Carolina had several reports this season, continuing a recent trend the past several winters. Two 1st-winters were at Jordan Lake Feb. 1 (Will Cook *et al.*), a 1st-winter

and a 3rd-winter were at the Raleigh landfill in January (Dan Kaplan *et al.*), and a 1st-winter bird was at Falls Lake Feb. 9 (Ricky Davis).

BLACK-LEGGED KITTIWAKE: The best count was the 30 found on the Hatteras pelagic trip Feb. 9 (Brian Patteson *et al.*). Onshore reports included one in the Cape Hatteras area most of the winter (m. ob.) and one found injured on the beach at Pine Knoll Shores, Carteret County, NC, Dec. 21 (*vide* John Fussell), which was taken to a local wildlife shelter.

RAZORBILL: This species was present in small numbers along the North Carolina coast this winter. Four were on the Bodie-Pea Islands C.B.C. Dec. 28 (Harry LeGrand *et al.*, Ricky Davis, Derb Carter); three were at Wrightsville Beach Jan. 3-4 (Derb Carter, Ricky Davis); three were at Fort Fisher Jan. 5 (Ricky Davis); and 12 were tallied on the Feb. 9 Hatteras pelagic trip (Brian Patteson *et al.*).

DOVEKIE: The only report was of one found alive on the beach at Pine Knoll Shores, NC, Dec. 21 (*vide* John Fussell). It died at a local wildlife shelter.

EURASIAN COLLARED-DOVE: Two were seen at North Topsail Island, NC, Jan. 20 (Nell Moore). At least two survived last year's hurricanes. It seems that this colonizing, invading species is good at surviving intense storms!

SHORT-EARED OWL: An individual was found near Falls Lake, NC, Feb. 16 (Russ Tyndall) for a locally unusual report.

HUMMINGBIRDS: It seems that more and more hummingbirds are reported from the Carolinas each winter. They have become almost too numerous to mention in detail. They can be broken down into the two obvious classes - *Archilochus* and *Selasphorus* types. There were 20+ *Archilochus* scattered near the coast with 12+ in Carteret County, NC, alone. Four to six were in the Buxton, NC, area also. Of these 20+ birds, at least eight were identified to Ruby-throateds. There were at least 10 *Selasphorus* in the Carolinas. Of these, adult male Rufous were seen in Charlotte, NC, Dec. 1-20 (*vide* Taylor Piephoff) and Belle Isle, Georgetown County, SC, late December to early January (*vide* Jack Peachey). Also an immature male Rufous was identified (by Sargent) in Pleasant Hill, Transylvania County, NC, (*vide* Norma Siebenheller). One highlight of the hummingbird season was the discovery of a *CALLIOPE* at the Scott feeder in Hampstead, NC, (Derb Carter, m. ob.). This bird was probably present all winter, but the news did not get out until late February. Over the next couple of weeks, on into March, the bird was observed and photographed by many people. This was the second documented record for the state.

WESTERN KINGBIRD: One was near Supply, Brunswick County, NC, Dec. 8 (Dick Brown, *vide* Diane Hahn), and one was at Frisco, NC, Dec. 12 (Nancy Nolan). These rare winter reports almost certainly involve late fall migrants.

EASTERN KINGBIRD: One was reported (and well-described!) on the Bodie-Pea Islands, NC, C.B.C. Dec. 28 (Carol Brown, *fide* Paul Sykes), for an extremely unusual sighting. This is one of those species that when reported from the winter season requires thorough details.

BARN SWALLOW: One was late at Lake Mattamuskeet, NC, Dec. 1 (Eric Dean).

HOUSE WREN: One was found on the New River, NC, C.B.C. Dec. 28 (Harrol Blevins *et al.*), providing a rare report from the mountains during winter.

EASTERN BLUEBIRD: In the amazing department was the pair of bluebirds incubating three eggs in mid-January near Kernersville, NC, (*fide* Ramona Snavelly). They were known to incubate for at least five days, even through an ice storm! As far as is known, the nesting attempt was unsuccessful.

VEERY: One was found on the Mt. Jefferson, NC, C.B.C. Dec. 21 (Jim Keighton, James Coman III). The bird was well-described and provided an extremely rare winter sighting. All non-Hermit Thrush reports in the winter should be thoroughly described.

GRAY CATBIRD: Locally unusual inland in winter, two were on the Chapel Hill, NC, C.B.C. Dec. 29 (*fide* Will Cook), and one was on the Jordan Lake, NC, C.B.C. Jan. 5 (Chuck Byrd, Randy Neighbarger).

LOGGERHEAD SHRIKE: The decline of this species has been known for some time, so the report of 30 on the Aiken, SC, C.B.C. Dec. 24 was good news (*fide* Anne Waters).

ORANGE-CROWNED WARBLER: Unusual away from the outer coastal plain in winter were singles on the Lake Norman, NC, C.B.C. Dec. 22 (Taylor Piephoff) and at Jordan Lake, NC, Jan. 18 (Will Cook).

YELLOW WARBLER: An adult male was found on the Spartanburg, SC, C.B.C. Jan. 4 (Lyle Campbell) for a very rare winter report. Most of the few winter sightings of Yellow Warblers have been coastal, thereby making this one all the more remarkable.

YELLOW-THROATED WARBLER: The presence of 5-6 singing Yellow-throateds at the Silver Bluff Sanctuary, Jackson, SC, on Feb. 17 was truly amazing (Paul Koehler, *fide* Anne Waters). With that many being found, they were probably early returning nesters and not overwintering birds. Another early one was also singing on the Dare County, NC, mainland Feb. 28 as noted by Mary Lou Bell (*fide* John Fussell).

BLACK-AND-WHITE WARBLER: Four were found on the Lake Mattamuskeet, NC, C.B.C. Dec. 29 (*fide* Allen Bryan) for a good winter count.

NORTHERN WATERTHRUSH: A very rare winter report involved the individual found on the Wilmington, NC, C.B.C. Jan. 4 (Greg Massey,

Maurice Barnhill). What is interesting is that the observers felt that there were two present, although only one was seen well.

WESTERN TANAGER: Only one was reported, a female at Kiawah Island, SC, all winter (Dennis Forsythe).

ROSE-BREASTED GROSBEAK: A winter-plumaged male was at a feeder in Buxton, NC, Jan. 9-10 (Charlotte and Eric Fulcher) for a very rare winter sighting. One hopes that Black-headed Grosbeak was ruled out by close observation.

PAINTED BUNTING: This species continues to be found during the winter. Seven were in Carteret County, NC, (*fide* John Fussell), with at least three of these in Morehead City. Up to eight were in the Buxton, NC, area (m. ob.), and two were at a feeder in Rodanthe all winter (Jeff Lewis).

DICKCISSEL: The only one reported this winter was one found at Edisto Beach, SC, Feb. 16 (Sid Gauthreaux, Carroll Belser).

AMERICAN TREE SPARROW: Extremely rare in South Carolina, one provided some excitement on the Greenville C.B.C. Dec. 28 when it was found in Simpsonville (Pete Worthington). This was the only report for the Carolinas this winter.

CLAY-COLORED SPARROW: Rare in winter in the Carolinas, one was at Buxton, NC, Dec. 16 (Marcia Lyons). This was probably a late migrant and did not try to overwinter.

LECONTE'S SPARROW: One was found on the Greenville, NC, C.B.C. Jan. 5 (Brad Carlson, Ken Harrell, Ernie Marshall) for the only report of this elusive, rare winter visitor.

FOX SPARROW: This species was more common than usual in several coastal areas this winter. One example was the 94 found in one area of Brunswick County, NC, Jan. 4 (Ricky Davis).

LINCOLN'S SPARROW: Lincoln's Sparrows were less common this winter. Only three reports were received: one was in Pitt County, NC, Dec. 15 (Brad Carlson), one was near Aurora, NC, Dec. 15 (Eric Dean), and one was in Horry County, SC, Feb. 25 (Lex Glover).

"MYSTERY" SPARROW: A sparrow of some sort provided a lot of excitement in the yard of Roger Kohn and Ramona Conyers in Durham, NC, this winter. The bird was a deep, dark reddish-brown on the body and almost black on the back, head, neck, and breast. It was associating with White-throated and Fox Sparrows, and observers felt it was one of these with abnormal pigment and not some kind of hybrid. The general consensus was that it appeared to be most like a White-throated in shape, size, and behavior. An erythristic (excessive reddish-brown pigment) or melanistic (excessive black pigment) White-throated Sparrow is the best guess at this time. The bird

never did vocalize during its stay (November through the end of the period) and we'll probably never know what's going on with this bird. Amazingly this was the second winter in a row that it had appeared, so maybe it will return for a third season in late 1997!

LAPLAND LONGSPUR: Reports included one at the Orangeburg sod farm, SC, Jan. 5 (Robin Carter, Caroline Eastman); one at Cape Hatteras, NC, Jan. 18-19 (Brad Carlson, Haven Wiley *et al.*, Keith Camburn, Brainard Palmer-Ball, Ron Cicerello); one at Townville, SC, Feb. 22 (Steve and Freda Mitchell); and four at Hooper Lane, Henderson County, NC, during December (Wayne Forsythe, Simon Thompson) building to eight in January (m. ob.)!

SNOW BUNTING: Snow Buntings were found in the Carolinas in what must have been record numbers. The flock at Huntington Beach State Park, SC, built from 11 in early December (Mary McDavit, Lex Glover) to 30 in early January (Jack Peachey). Five were at Ft. Sumter, SC, Dec. 30 (Peter Osenton, *fide* Kent Fiala) for another report from that state. In North Carolina, the numbers were truly impressive. In the Cape Hatteras area, a flock of about 36 was present from Dec. 15 (Pat Moore, Bert Fisher, Leto Copeley, Chris Eley) until at least Jan. 18 (Brad Carlson, Jodi Nicholson). Nine were on the Morehead City C.B.C. Dec. 22 (Eric Dean, Gene Howe, Sue Greenberg). There was a flock of buntings in the Oregon Inlet area throughout the winter, and the peak count was an amazing 60 on Feb. 19 (Jeff Lewis). There were also some inland reports, with one at Jordan Lake Dec. 31 - Jan. 8 (Lucretia Kinney, Will Cook, m. ob.) and a flock of 10 at Etowah, Henderson County, Jan. 10 (Ira Weigley).

BREWER'S BLACKBIRD: Always noteworthy, one was on the Lake Norman, NC, C.B.C. Dec. 22 (Taylor Piephoff), and four were on the Lake Mattamuskeet, NC, C.B.C. Dec. 29 (*fide* Allen Bryan).

BALTIMORE ORIOLE: A male oriole at the feeder of Betty and Lloyd Davis in Rocky Mount, NC, was different from the others. This individual was patterned exactly like the other males, but the orange color was replaced by a deep scarlet red color! The Davises have been feeding orioles for 30 years, and this is the first one they've seen with color like this. Are there any other instances of abnormal coloration in orioles? And what would cause it?

RED CROSSBILL: The only report received was of two heard in flight at Burrell's Ford, Oconee County, SC, Dec. 28 (Lex Glover, Mike Turner).

FINCHES: Purple Finches were spread across the Carolinas in very small numbers, with most counts involving from a couple to 5 or 6 at feeding stations. Pine Siskins were reported even less, and Evening Grosbeaks were reported only twice: 12 in Chester County, SC, Jan. 14 (Albert Conway), and two near Fayetteville, NC, (Hal Broadfoot). Obviously not a finch year!

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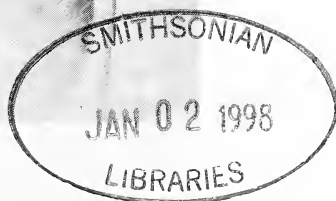
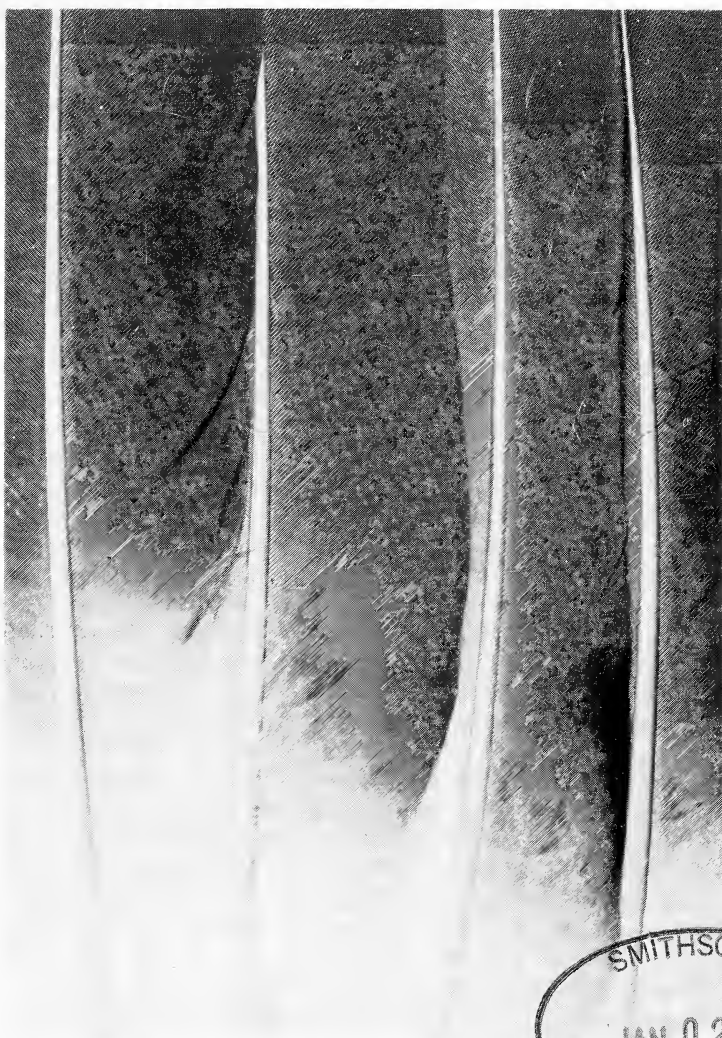
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Cover photo by Jimmy Wood. Red-tailed Hawk feathers courtesy SC Department of Natural Resources.

Survey and Census of Colonial Nesting Seabirds in South Carolina

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INTRODUCTION

Colonial seabirds are among the most conspicuous of any species found in South Carolina. They are generally large and are usually habituated to humans. Species such as the Eastern Brown Pelican (*Pelecanus occidentalis*) are often associated with the coast and are frequently the focus of tourism posters, souvenirs, and crafts.

The well-being of colonial seabirds and other waterbirds is synonymous with the health of the coast. Their variety of feeding mechanisms, broad prey base, wide range of salinity preferences, and a place near the top of the food chain all suggest that seabirds should serve as indicators of environmental health.

The vulnerability of nesting waterbirds has been made all too clear. Some heron and egret species (*Ardeidae*) were nearly exterminated by plume hunters in the late 1800s. More recently, Eastern Brown Pelican populations declined as a result of organochlorine pesticides until most uses of DDT were banned nationally in 1972. Wood Stork (*Mycteria americana*) numbers declined from 20,000 breeding pairs in 1930 to 5,000 pairs in 1985. These declines, especially in south Florida, appear to be directly related to human alteration of wetlands. The sensitivity of colonial waterbirds is directly related to the integral part they play in all the ecosystems in which they exist.

To manage colonial seabird species and to use them as environmental indicators, it is necessary to conduct point-in-time surveys and census in a reproducible, quantified manner. The fact that they are colonial nesters facilitates census and monitoring. Until our surveys (1988-89, 1993-95), there had never been a reproducible, statewide survey of colonial waterbirds of South Carolina. Only certain species have been monitored on a limited basis, especially during the 1960s and '70s (Beckett 1966*a, b*, Blus and Prouty 1979, Blus and Lamont 1979, Blus *et al.* 1979, Portnoy *et al.* 1981, and Wilkinson 1981, 1982). Some of the past censuses for these species are comparable to

recent ones because they were total nest counts that employed census techniques similar to those presently used.

OBJECTIVES

The objectives of our survey and census were to document population trends of nesting sea and shorebirds that were nesting, in most cases, colonially on the outer coast of South Carolina. Included were pelicans (*Pelecanidae*), shorebirds (*Haematipodidae* and *charadriidae*), gulls, terns (*Laridae*), and skimmers (*Rynchopidae*). Another objective was to develop a microcomputer data base that could be used to develop long term population trends and habitat use by sea and shorebirds in South Carolina.

METHODS

Sea and shorebird colonies were located based on 1) historical records, 2) results of recent surveys, 3) information derived from active birders, 4) habitat thought to be suitable, and 5) coastal aerial and boat surveys. During the 1988 and 1989 nesting season, nesting data were collected using several population estimation techniques. The techniques included aerial photographic counts, mark/recount multiple ground counts, single ground counts, point counts, perimeter counts, and sample counts made from 20% randomly stratified, parallel-strip transects.

Census procedures in South Carolina have evolved over time as techniques were tried and either incorporated or discarded. For instance, in early years (1969-86) pelican nest counts were done by single total ground-counts, usually done (but not always) between May 15-25, a time of peak nesting for pelicans in South Carolina. Beginning in 1987, incubation interval counts were tried on Marsh Island for pelican census and later used (1988-92) on all pelican nesting sites in South Carolina. This required that counts be made, of nests with eggs only, at incubation intervals in April, May and June. This method represented total nesting effort, while the single ground count compared yearly peak trends. Pelican nest numbers compiled during incubation interval count years would be inflated when compared to peak nesting single ground counts done during earlier or later years. Caution is suggested when comparing pelican nest counts done by these different methods because standardization of these count methods after the fact may cause misinterpretation and may be misleading. For more detail on these survey and census techniques, see Wilkinson 1991.

SURVEY AND CENSUS RESULTS 1988-89, 1993-96

In 1988, baseline surveys and census were initiated for sea and shorebird nesting on 45 sites ranging in size from < 10 m to > 5 km along the entire coast of South Carolina. The areas surveyed included all suitable seabird nesting habitats in the state. Of these sites, 23 were found to have seabird nesting.

Twenty-seven thousand six hundred sixty-two (27,662) nests of sea and shorebirds were located. The number of nesting pairs in 1988 were Royal Tern (10,771), Laughing Gull (7,288), Brown Pelican (6,783 - incubation interval counts used this year), Sandwich Tern (1,877), Black Skimmer (483), Gull-billed Tern (254), American Oystercatcher (141), Forster's Tern (40), Wilson's Plover (24), and Common Tern (1) (Table I).

These surveys and censuses were repeated in 1989. Results indicated a slight increase in nesting compared to 1988. Most of the nesting was accounted for by four species: Royal Tern (10,444), Brown Pelican (7,739 - incubation interval counts used again this year), Laughing Gull (6,563), and Sandwich Tern (2,204). There was a substantial increase in Black Skimmer counts. Thirty-seven sites were occupied for nesting in 1989, a substantial increase over the previous year. However, the increase was primarily attributable to two species: American Oystercatcher, and Wilson's Plover, birds which frequently move sites when disturbed. Most of the nesting occurred on 4 sites: Bird Key Stono, Marsh Island, Deveaux Bank and Middle White Banks.

In 1993, 26,649 nests were located on 46 nesting areas. The most numerous species were Royal Terns, Laughing Gulls, and Eastern Brown Pelicans (mid/late May single ground counts resumed this year), respectively. Areas that represented the largest number of nesting pairs and variety of species were Bird Key Stono, Deveaux Bank and Marsh Island (Table III).

A comparison of sea and shorebird nesting during the late 1980s and early 1990s indicates that nesting remained relatively stable for most species during the period (Tables I, II, and III). However, between the 1993 and 1994 nesting seasons there was a precipitous decline in nesting (-9,492 nests or -35.6%). Principal species involved in the decline were Eastern Brown Pelican, Laughing Gull, Sandwich Tern and Royal Tern (Tables III, IV). Severe erosion of Bird Key Stono, a major rookery, was at least in part attributable to this decline. All species nesting there were negatively impacted. The mixed colony on this island accounted for an average of 41% of the sea and shorebird nesting in South Carolina during 1988, '89, '93, and '94 years when complete surveys for the state were done. It also had become the site of the largest Eastern

Table 1. Colonial Sea and Shorebird Nesting in South Carolina - 1988

AREA	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		**Brown Pelican		TOTAL NESTS
	Pair	Nest	Pair	Nest	Nest	Nest	Tern	Nest	Tern	Nest	Tern	Nest	Tern	Nest	Tern	Nest	Tern	Nest	Nest	Nest	Nest		
Wattles Island																							
Garden City Point																							
Murrelets Inlet																							
Huntington Beach State Park	3										1												4
Litchfield Beach																							
North Island	6			5		41											4						56
Bosun's Point																							
Winyah Bay																							
Sand Island																							
South Island																							
Cedar Is.																							
Cape Island							16									3							19
Cape Romain Harbor																							
Lighthouse Island																							
Raccoon Key	2		35			9										47							93
Five Fathom Creek																							
White Banks East				5															250				255
White Banks Middle				5															738		423	1166	
White Banks West			10					23											321		31	385	
Marsh Island			6			16		17					3842	872		19	1563				2350	8685	
New Island																							
Bird Island			6			25							417	1		28	3						480
Anderson Creek																							
Bull Island																							
AIW Sewee to Charleston Harbor			19																				19
Crab Bank			13			34																	
Castle Pinkney			6													29							76
Bird Key Stono			2			29																	6
Skimmer Flats			1			58																	
Captain Sam's Inlet																							89
Deveaux Bank			4			231																	
Botany Bay Island	4																						
Edingsville Beach			1																				4
Edisto Beach																							1
South Edisto River			2																				2
St. Helena Sound						8																	8
Harbor Island																							
Hunting Island																							
Fripp Island																							

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AREA	Colonial Sea and Shorebird Nesting in South Carolina - 1988																							
	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull Billed Tern		Laughing Gull		**Brown Pelican		TOTAL NESTS	
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest		
Bull Point		9		2																			11	
Port Royal Sound																								
Joiner Bank																								
AIW behind Hilton Head						24												2					26	
Skull Creek				7																			7	
Callioque Sound				4																			4	
Total Per Species	*NC	24	*NC	141	483	0	40	1	10771	1877	254	7288	6783	27662										

*NC = Not complete or not counted.

** Incubation Interval Counts

Table II. Colonial Sea and Shorebird Nesting in South Carolina - 1989

AREA	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		** Brown Pelican	TOTAL NESTS
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	
Wattles Island																						
Garden City Point		2																				2
Murrelets Inlet																						2
Huntington Beach State Park											1											1
Litchfield Beach		3																				3
North Island		8																				24
Bosun's Point		7					4				1											19
Winyah Bay																						1
Sand Island																						
South Island																						
Cedar Island		1																				1
Cape Island		20					196	1			4						5					246
Cape Romain Harbor																						14
Lighthouse Island		2																				5
Raccoon Key							58	99									15					172
Five Fathom Creek							2															2
White Banks East							3												430			433
White Banks Middle							4			9							30		974	312		1299
White Banks West							25												220			275
Marsh Island							11						4288		1221				1592	3430		10522
New Island							3	50											3			56
Bird Island							11	60			1						35					107
Anderson Creek		2					2															4
Bull Island																						
AIW Sewee to Charleston Harbor							26															26
Crab Bank							15	129									79		3			226
Castle Pinkney							9															9
Bird Key Stono							3						5219		835				3163	3974		13194
Skimmer Flats																	2		2			4
Captain Sam's Inlet		1					2															3
Deveaux Bank							9	358					957		148		193		176	23		1864
Botany Bay Island		4					1															5
Edingsville Beach		1					3															4
Edisto Beach		3																				3
South Edisto River																						
St. Helena Sound							4															4
Harbor Island																						
Hunting Island																						
Fripp Island							1															1

(continued on next page)

Colonial Sea and Shorebird Nesting in South Carolina - 1989																							
AREA	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		**Brown Pelican		TOTAL NESTS
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	
Bull Point				1																			1
Port Royal Sound																							
Joiner Bank						195												21					216
AIW behind Hilton Head				5																			5
Skull Creek				1																			1
Calibogue Sound				2																			2
Total Per Species	*NC	54	*NC	265	1091			1	9		7	10444	2204	380	6563	7739	28756						

*NC = Not Complete or not counted.

**Incubation Interval Counts

Brown Pelican rookery within the species range (Wilkinson *et al.* 1994). However, it completely washed away between the 1994 and 1995 nesting seasons. The principal species that nested on Bird Key Stono were Royal Tern, Sandwich Tern, Laughing Gull, and Eastern Brown Pelican. The average percent nesting decrease for these species in 1995 when compared with 1988, '89, '93, and '94, was 37%. This suggests that loss of nesting habitat caused by the disappearance of Bird Key Stono is in great part responsible for the recent sea and shorebird nesting decline in South Carolina.

Simultaneous surveys and censuses conducted in North Carolina, South Carolina, and Georgia allowed for a regional overview of nesting losses and gains for the 1993 and 1995 seasons. Eastern Brown Pelican losses in South Carolina (-1,396) were almost exactly accounted for by gains in North Carolina and Georgia. Royal Tern losses in South Carolina (-5,181) and North Carolina (-500) were accounted for by gains in Georgia. Laughing Gull losses in South Carolina (-2,500) were more than accounted for by gains in North Carolina (+5,500). North Carolina also apparently picked up gains in Laughing Gulls from nesting declines in Virginia during the same period. Gull-billed Tern losses in South Carolina (-112) were accounted for gains in North Carolina and Georgia. Sandwich Tern losses in South Carolina (-920) have not been accounted for in the other two states (Figure 1).

Survey and census emphasis in 1996 was primarily directed toward the colonial wading birds and survey effort was reduced for sea and shorebirds. However, we conducted surveys for five species that had shown declines during the previous year. Four of the five species continued to show a nesting decline during 1996: Royal Tern, Sandwich Tern, Eastern Brown Pelican, and Black Skimmer. Counts for Laughing Gulls were not done statewide in 1996 and therefore totals are not comparable with other years. Gull-billed Tern nesting increased during this same period (Table VI).

SPECIES ACCOUNTS

Brown Pelican Trends

Systematic annual counts of pelican nests have been conducted in South Carolina since 1969. Brown Pelicans have nested at ten locations since 1946. Six of these sites were in the Bulls Bay region. Marsh Island, (in the middle of Bulls Bay) was a major pelican nesting site from 1948-1996, and had nests in all but eight years during this period. Other important pelican colonies in South Carolina included Deveaux Bank in the mouth of the North Edisto River. It contained one of the two largest pelican colonies in South Carolina from 1946 until it washed away in 1979. In 1980, pelicans used Bird Key

Table III. Colonial Sea and Shorebird Nesting in South Carolina - 1993

AREA	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		**Brown Pelican		TOTAL NESTS
	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	Pair	Nest	
Wattles Island	2	2																					4
Garden City Point	4	2																					6
Murrelets Inlet			14	6																			20
Huntington Beach State Park																							
Litchfield Beach																							
North Island	6		10	8																			24
Winyah Bay																							
Bosun's Point			3	1																			4
Sand Island	4		1																				5
South Island																							
Cedar Island																							
Cape Island	18	4	18	12	84																		136
Cape Romain Harbor			13	3																			16
Lighthouse Island			2	2	94																		98
Raccoon Key	19	1	28	25	228	1					18						87						407
Five Fathom Creek			6	2																			8
White Banks East			4	4															320				328
White Banks Middle			8	3													27		566				594
White Banks West			8	7			4												54				73
Marsh Island			9	9									2211	196			2	1399	1936				5762
New Island			2	2																			4
Bird Island																							
Anderson Creek			5	1																			6
Bull Island	10		2																				12
AIW Sewee to Charleston Harbor	6		26	13																			45
Grab Bank			1	64													16		124				205
Castle Pinkney				8																			8
Bird Key Srono			2	1	98	1							1345	1494					4331		3181		10354
Skimmer Flats																	9						110
Captain Sam's Inlet																							
Deveaux Bank					178								6452	832			129		532		42		8165
Seabrook Island																							
Botany Bay Island																							
Edingsville Beach																							
Edisto Beach																							
South Edisto River			1																				1
St. Helena Sound			11	2																			13
Harbor Is.			2																				2
Hunting Island																							

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AREA	Colonia Sea and Shorebird Nesting in South Carolina - 1993															
	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern	
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest
Fripp Island																
Bull Point																
Port Royal Sound	1		8	6												15
Joiner Bank			2	2	189								7			200
AIW behind Hilton Head			3	1												4
Skull Creek			2													2
Calibogue Sound			16	2												18
Total Per Species	70	9	206	123	935	2	4	18	10008	2522	277	7316	5159	26649		

*NC = Not complete or not counted.

**Peak Nesting Single Ground Counts

Table IV. Colonial Sea and Shorebird Nesting in South Carolina - 1994

Table IV. Colonial Sea and Shorebird Nesting in South Carolina - 1994																							
AREA	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		**Brown Pelican		TOTAL NESTS
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest		
Waits Island																							4
Garden City Point	4																						
Murrells Inlet																							
Huntington Beach St Park	1																						1
Litchfield Beach	5	1																					6
North Island	2																						2
Winyah Bay																							
Bosun's Point																							
Sand Island																							
South Island																							
Cedar Island																							
Cape Island		1					25										9						35
Cape Romain harbor																							
Lighthouse Island		5					289			8							4						306
Raccoon Key							97			4							31						132
Five Fathom Creek																							
White Banks East																			151				151
White Banks Middle													265		6		40		452				763
White Banks West																		125		12			137
Marsh Island													733		27		10		612		556		1938
New Island																							
Bird Island																							
Anderson Creek																							
Bull Island																							
AIW Sewee to Charleston Harbor																							
Crab Bank							51												212				263
Castle Pinkney																							
Bird Key Stono							112						2873		1556		29		1946		2078		8594
Skimmer Flats																							
Captain Sam's Inlet																							
Deveaux Bank							194						3149		165		59		846		177		4590
Seabrook Island																							
Botany Bay Island																							
Eddingsville Beach																							
Edisto Beach																							
South Edisto River																							
St. Helena Sound																							
Harbor Island																							
Hunting Island																							
Fripp Island																							

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Colonial Sea and Shorebird Nesting in South Carolina - 1994														
AREA	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern	
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest
Bull Point														
Port Royal Sound														
Joiner Bank						235								235
AIW Behind Hilton Head														
Skull Creek														
Calibogue Sound														
Total Per Species	12	7	NC	NC	1003	0	0	0	12	7020	1754	182	4344	2823
TOTAL NESTS														17157

*NC = Not complete or not counted.

**Peak Nesting Single Ground Counts

Table V. Colonial Sea and Shorebird Nesting in South Carolina - 1995

AREA	American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		Brown Pelican		TOTAL NESTS	
	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest
Wades Island																						
Garden City Point																						
Murrells Inlet		9																				9
Huntington Beach State Park																						
Litchfield Beach																						
North Island		1																				1
Winyah Bay																						
Bosun's Point																						
Sand Island																						
South Island																						
Cedar Island																						
Cape Island		7	221							13						1						242
Cape Romain Harbor		2																				2
Lighthouse Island			46		1					14						1						62
Raccoon Key		3	251		1					24						84						363
Five Fathom Creek		1																				1
White Banks East		5																				595
White Banks Middle		2									133					59						1042
White Banks West		3									71											235
Marsh Island		2			1						1707		527									5769
New Island																						
Bird Island																						
Anderson Creek		1																				1
Bull Island																						
AIW Sewee to Char. Harbor		14																				14
Crab Bank		7	88								129					6	819					1926
Castle Pinkney		6																				6
Bird Key Stono																						
Skimmer Flats				5												3	28					61
Kiawah Island				51												4	17					72
Captain Sam's Inlet																						
Devaux Bank		1	36								2787		1075			7	312					5075
Seabrook Island																						
Botany Bay Island																						
Eddingsville Beach																						
Edisto Beach																						
South Edisto River																						
St. Helena Sound																						
Harbor Island																						
Hunting Island																						

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Colonial Sea and Shorebird Nesting in South Carolina - 1995

AREA	American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Common Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		Brown Pelican		TOTAL NESTS
	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	
Fripp Island																					
Bull Point																					
Port Royal Sound																					
Joiner Bank																					298
AIW Behind Hilton Head																					
Skull Creek																					
Calibogue Sound																					
Total Per Species	*NC	64	996	3	0	51	4827	1602	165	4866	3200	15774									

*NC Not Complete or Not Counted

**Peak Nesting Single Ground Counts

Table VI. Colonial Sea and Shorebird Nesting in South Carolina - 1996

AREA	Wilson's Plover		American Oystercatcher		Black Skimmer		Sooty Tern		Forster's Tern		Commo Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		**Brown Pelican		TOTAL NESTS	
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest
Waties Island																								
Garden City Point																								
Murrells Inlet																								
Huntington Bch. St. Pk.																								
Litchfield Beach																								
North Island																								
Winyah Bay																								
Bosun's Point																								
Sand Island																								
South Island																								
Cedar Island																								
Cape Island																								
Cape Romain Harbor																								
Lighthouse Island													14	861	256		88							1760
Raccoon Key																								
Five Fathom Creek																								
White Banks East																								41
White Banks Middle													44				14							123
White Banks West																								8
Marsh Island																	82		9	106		1168		2135
New Island																								
Bird Island																								
Anderson Creek																								
Bull Island																								
AIW Sewee to Char.Hrb.																								
Crab Bank																								
Castle Pinkney																								
Bird Key Stono																								
Skimmer Flats																								61
Captain Sam's Inlet																								
Deveaux Bank																								
Seabrook Island																								
Botany Bay Island																								
Eddingsville Beach																								
Edisto Beach																								
South Edisto River																								
St. Helena Sound																								
Harbor Island																								
Hunting Island																								
Fripp Island																								

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Colonial Sea and Shorebird Nesting in South Carolina - 1996

AREA	Wilson's Plover		American Oystercr		Black Skimmer		Sooty Tern		Forster's Tern		Commo Tern		Royal Tern		Sandwich Tern		Gull-Billed Tern		Laughing Gull		**Brown Pelican		TOTAL NESTS
	Pair	Nest	Pair	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	Nest	
Bull Point																							
Port Royal Sound																							
Joiner Bank																							
AIW Behind Hilton Head																							
Skull Creek																							
Calibogue Sound																							
Total Per Species	*NC	*NC	*NC	*NC		698	0	0	0	14	3118	1535	192	*NC								3081	*NC

*NC = Not complete or not counted.

**Peak Nesting Single Ground Counts

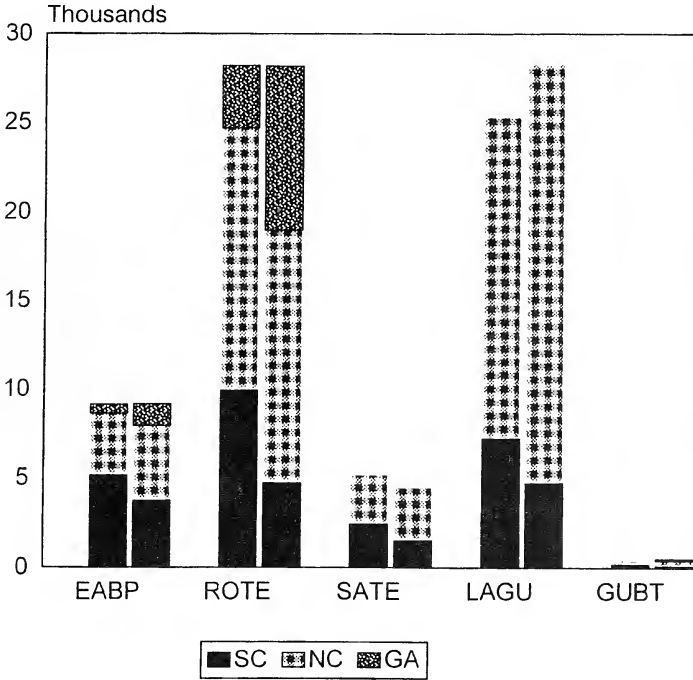


Figure 1. Comparisons of seabird nesting in North Carolina, South Carolina, and Georgia in 1993 (left column) and 1995 (right column)

Stono, 20 km northeast of Deveaux Bank. Bird Key Stono's colony was quickly established as one of the largest Eastern Brown Pelican colonies in the United States, with 2,029-3,979 nesting pairs (Wilkinson *et al.* 1994).

Numbers of pelican nests have generally increased each year from 1970-1989. Nest numbers decreased in 1990 after Hurricane Hugo and then increased somewhat in 1992 and 1993. In 1994, nesting again decreased and remains low (Figure 2). The recent disappearance of Bird Key Stono has been implicated as a cause in this latest decline.

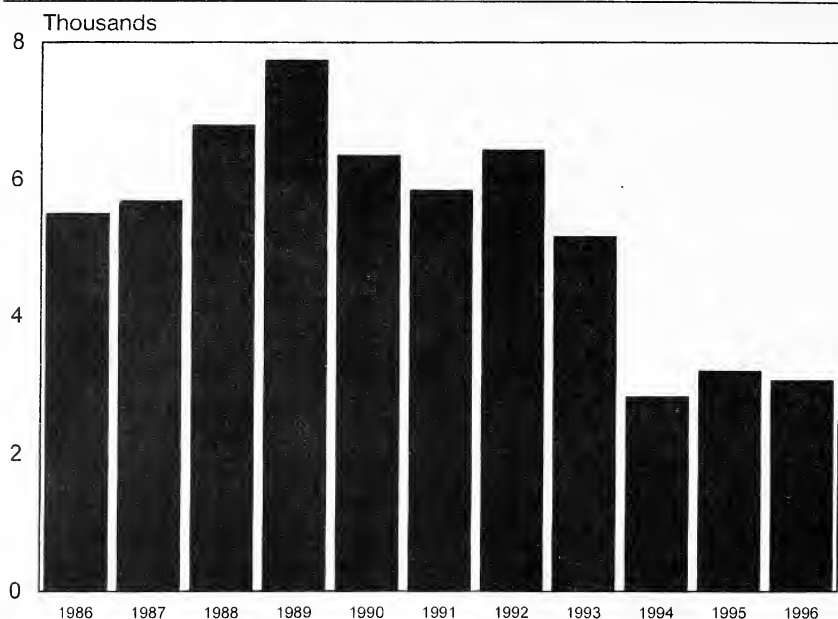


Figure 2. Eastern Brown Pelican nesting trends in South Carolina 1986-96.

1987-1992 Incubation Interval Counts

1986, 1993-1996 Nesting Single Ground Counts

Wilson's Plover

The Wilson's Plover is a fairly common resident along most of the South Carolina coast from March through October, but is uncommon in winter. It is strictly a coastal species and is only a vagrant inland. It is a fairly gregarious bird, often seen in small flocks or with other species of small plovers. It sometimes is a colonial nester, but it maintains individual territories. It may occasionally be found nesting in Least Tern colonies.

Most hatching occurs in late May and June. During recent surveys, Wilson's Plovers were found nesting in all coastal counties except Jasper. Ten traditional sites were Murrells Inlet area, North Inlet area, Sandy Island (Winyah Bay), Cape Island, Lighthouse Island, Raccoon Key, Bull Island, Kiawah Island, Botany Bay Island, and Little Capers Island.

Wilson's Plovers appear to nest in South Carolina in low numbers; but since our technique of locating nests appears to be inefficient and the timing

of nesting asynchronous, perhaps this assessment greatly underestimates nesting.

American Oystercatcher

The American Oystercatcher is a common resident on the South Carolina coast and is locally abundant in winter. The Cape Romain region is one of its most important wintering areas on the eastern North American coast (Marsh and Wilkinson, 1991). The oystercatcher nests from Waites Island to Calibogue Sound on the South Carolina coast, but over 75% of this nesting occurs from Cape Island to Charleston Harbor.

In South Carolina, oystercatchers nest on small islands, coastal beaches, dunes, and wave-formed shell ridges. They usually do not colonize but nest on separate territories. Occasionally a dozen or more pair will nest on a small island near each other.

Regular oystercatcher nesting surveys were initiated in 1986 by the South Carolina Wildlife and Marine Resources Department. Nesting occurred at a fairly large number of sites along the coast, but there are eleven important general locations that have been traditionally used for nesting by oystercatchers: Murrells Inlet, the North Inlet area, Cape Island, Cape Harbor, Raccoon Key, Marsh Island, White Banks, the Intracoastal Waterway between Moore's Landing and Charleston Harbor, Crab Bank, Castle Pinkney, and Deveaux Bank. In the past, Raccoon Key was one of the most important oystercatcher nesting area on the South Carolina coast, with as many as 58 nests located there during a season. Following Hurricane Hugo, the oystercatcher wintering population was the lowest observed during the five years that surveys were conducted, and approximately half the number observed during the previous year (1989). A nesting decline after the hurricane was probably a result of erosion on all nesting areas in the Cape Romain region. Raccoon Key has continued to erode, and nesting remains low (1996).

Laughing Gull

The first record of Laughing Gulls nesting in South Carolina is April 8, 1884, when one nest was recorded in Beaufort County (Sprunt & Chamberlain 1970). Nearly 50 years later (May 1933), a second nest was found on White Banks, Bull's Bay. Laughing Gull nesting has continued in South Carolina since then. By the late 1940s, nesting had increased to around 200 pairs at two locations (Sprunt & Chamberlain 1970). It now is one of the most numerous nesting seabirds on the South Carolina coast (Tables I-V).

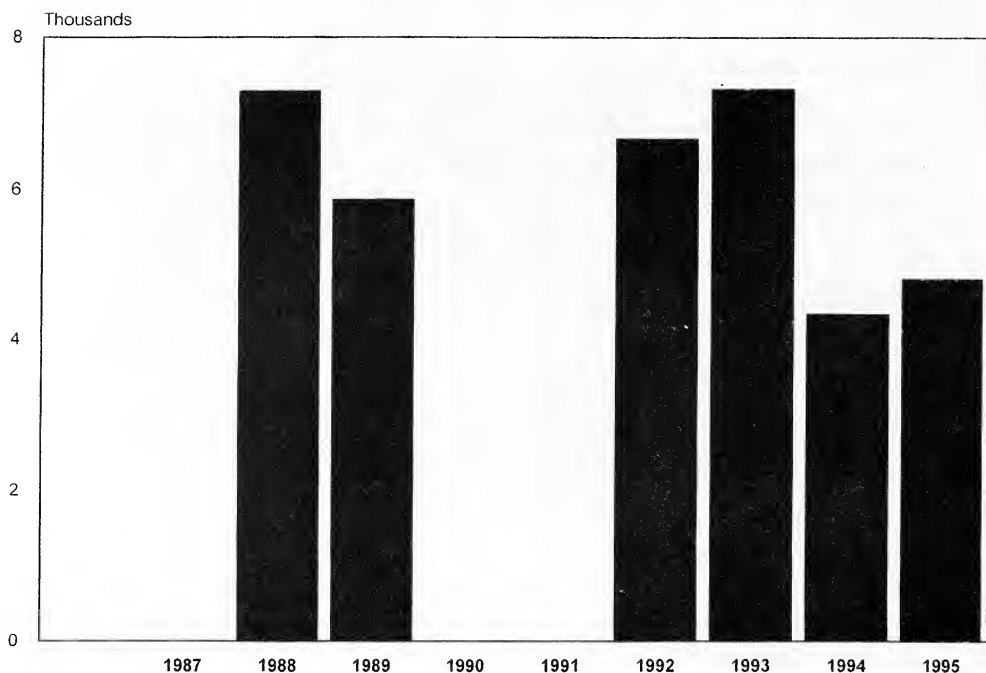


Figure 3. Laughing Gull nesting trends in South Carolina 1988-89, 1992-95.

Their colony sites are traditional as long as they remain suitable. In recent years they have nested at as many as 10 sites. The most important sites were White Banks (where nesting was originally initiated 60 years ago), Marsh Island, Crab Bank, Bird Key Stono, and Deveaux Bank.

Laughing gulls are difficult to survey, requiring intensive effort by experienced crews. Statewide Laughing Gull surveys were initiated in 1988 in South Carolina. Nesting trends are similar to some other seabirds, down from the recent past (Figure 3). This decline is probably attributable to nesting habitat loss when Bird Key Stono washed away.

Gull-billed Tern

The first nest of this tern found in South Carolina were on Cape Island in May 1929 (Sprunt and Chamberlain 1970). It now nests there regularly, but in low numbers.

Gull-billed tern nesting has occurred on 10 sites in South Carolina in the recent past. The most important sites were Raccoon Key, Crab Bank, Bird Key Stono, Deveaux Bank and Joyner Bank. It has shown a rather precipitous decline since 1990 (Figure 4).

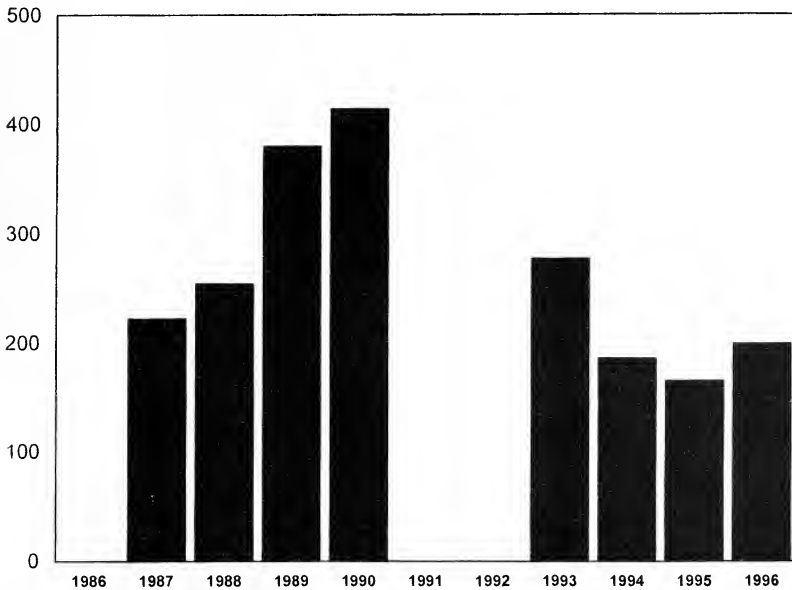


Figure 4. Gull-billed Tern nesting trends in South Carolina 1987-90, 1993-96.

Royal Tern

Royal Terns are usually the state's most abundant breeding marine birds. They nest in close-packed, often large colonies, usually with Sandwich Terns.

Royal Terns have nested at nine locations in South Carolina since 1974: Lighthouse Island, White Banks, Marsh Island, Bird Island in Bull's Bay,

Crab Bank, Bird Key Stono, Deveaux Bank, Egg Bank in St. Helena Sound, and Joyner Bank).

Our census indicates that Royal Tern nesting was highest, during the past eleven years, during 1990. Since that time, their nests have steadily declined in South Carolina. The 1996 census indicated that Royal Tern nesting in South Carolina was the lowest in 21 years (Figure 5).

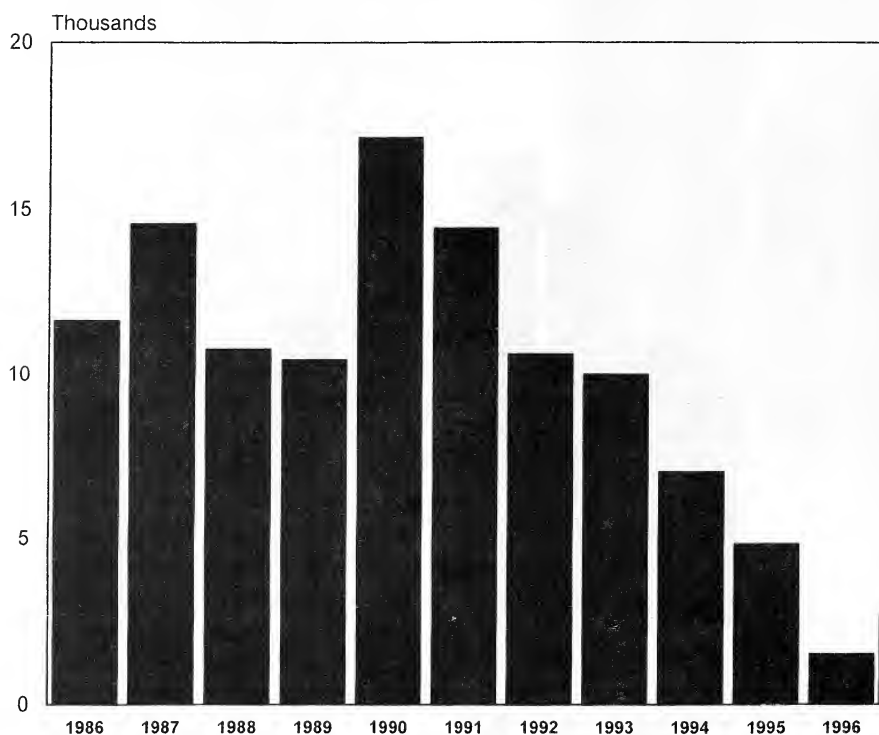


Figure 5. Royal Tern nesting trends in South Carolina 1986-96.

Sandwich Tern

In South Carolina, Sandwich Terns have always been found nesting with Royal Terns.

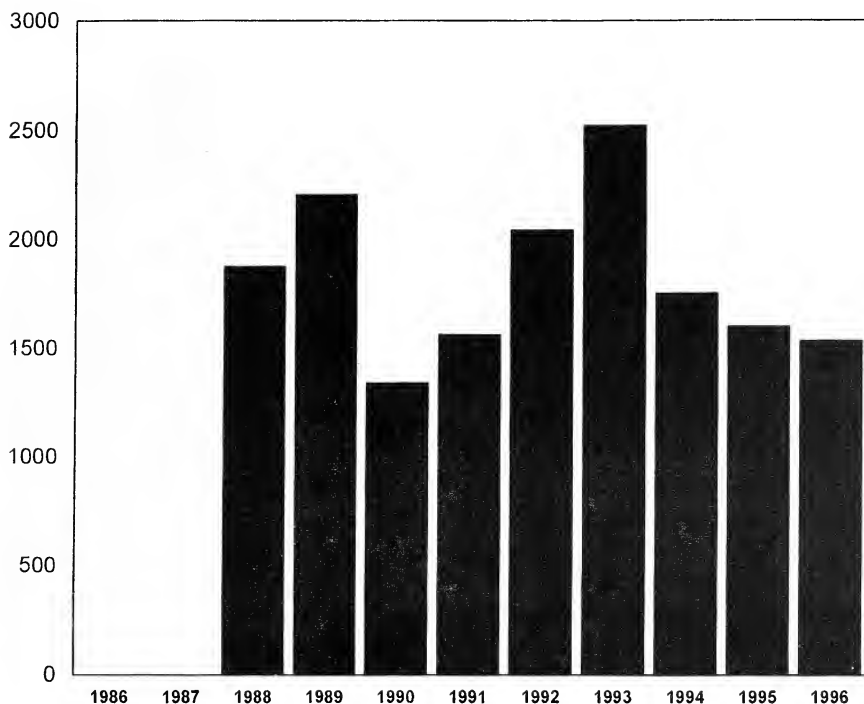


Figure 6. Sandwich Tern nesting trends in South Carolina 1988-96.

Sandwich Terns have nested at six colonies since 1975: Lighthouse Island, Marsh Island, Bird Island in Bull's Bay, Bird Key Stono, Deveaux Bank, and Joyner Bank). Although this species has declined since 1992-93, it remains rather stable over a longer period (Figure 6).

Black Skimmer

In South Carolina, skimmers nest on the ground in colonies, usually associated with Gull-billed Terns. Since the terns initiate nesting first, the skimmers appear to be the ones that choose the association. Their nesting season may be erratic and prolonged due to renesting attempts.

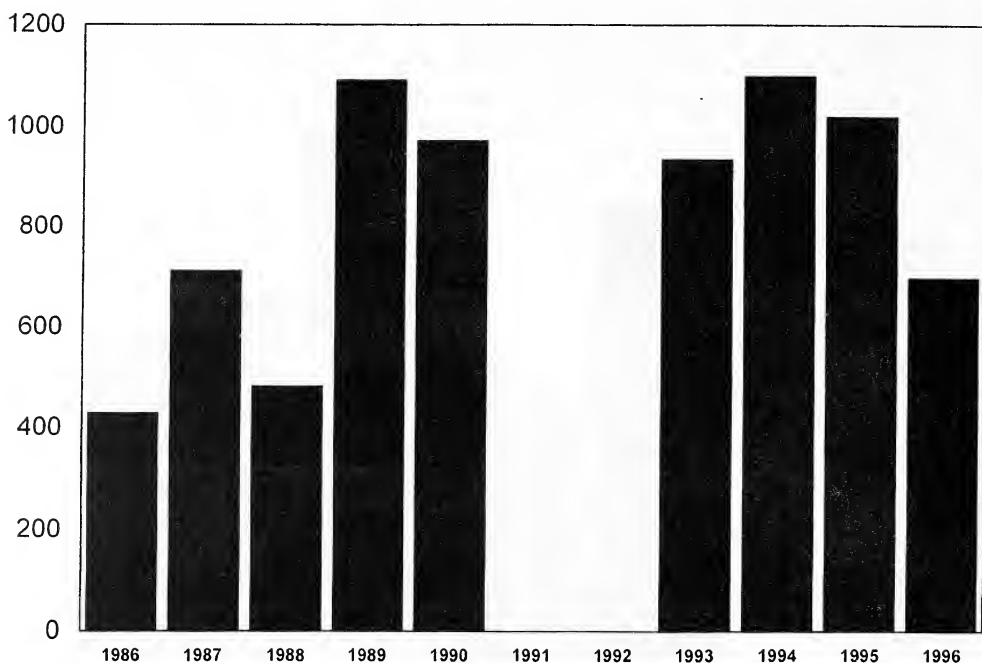


Figure 7. Black Skimmer nesting trends in South Carolina 1986-90, 1993-96.

Common Tern

A few are present in summer and breed here uncommonly. The central coast of South Carolina appears to be the southern limits of their breeding distribution along the Atlantic coast of the United States. In the southeastern states only North Carolina contains a significant number of breeding Common Terns.

The Common Tern was reported nesting for the first time in South Carolina on May 31, 1964, on Deveaux Bank. Subsequently, a total of eight nests were found there that year (Sprunt and Chamberlain 1970). Nesting in recent years has remained low. Their nesting is on open or sparsely vegetated

sand or sand/shell beaches, always in association with some other more abundant nesting species (*i.e.*, Black Skimmer, Gull-billed Tern, Least Tern and Wilson's Plover). Most of their limited nesting in South Carolina occurs in the Bull's Bay region.

Forster's Tern

The first confirmed nesting of this species in South Carolina was in 1987, when 13 nests, located in three separate groups, were found in the Bull's Bay region. It continues to nest there.

In South Carolina, Forster's Terns nest primarily in saltwater marshes. Nests are built on rafts of dead *spartina alterniflora* accumulated by wind or wave action. Nesting has also been found on a grassy beach island.

All nesting in South Carolina has been in the Bull's Bay region.

Other Sea and Shorebirds that Nest in South Carolina

Eight species of sea and shorebirds are recorded as having nested in South Carolina, seven of which were not specifically targeted for census during our surveys. These species are the Piping Plover (*Charadrius melodus*), Killdeer (*C. vociferus*), Black-necked Stilt (*Himantopus mexicanus*), Willet (*Cototrophorus semipalmetus*), Spotted Sandpiper (*Actitis macularia*), Caspian Tern (*Sterna caspia*), and Sooty Tern (*S. fuscata*). Four of these -- the Piping Plover, Spotted Sandpiper, Caspian Tern and Sooty Tern -- breed here very rarely and would be of interest mainly as a matter of record. The Killdeer nests mostly in open farmland and fields away from the coast, which is beyond the scope of these surveys. The Willet is a common resident on the coast and usually nests on beaches or near coastal marshes. Their cryptic nest is a grass lined depression on the ground located in low clumps of grass, bushes, or sometimes in stands of waist high grass. The nest is not easily located unless the female flushes. They usually nest singularly, but sometimes in well concealed loose colonies. There have been no standardized nesting surveys of Willets for South Carolina.

The Black-necked Stilt was once considered a rare summer resident in South Carolina. In the 1930s and 1940s, though still rather scarce, it was increasingly seen in the Cape Romain and Santee Delta region. The first breeding record for South Carolina was established in July 1938 in Charleston County (Sprunt & Chamberlain 1970). A second record was from South Island, Georgetown County, in 1947. In the 1950s, it became a fairly common summer resident in South Carolina and since that time has been found to nest in increasing numbers in several locations within the state.

There have been no standardized survey and census of nesting Black-necked Stilts in South Carolina. They mostly nest in impounded marsh areas and spoil sites, which are usually apart from areas where the coastal sea and shorebird surveys are conducted.

We found it difficult to survey and monitor Least Terns (*Sterna antillarum*) over large areas due to their use of both ground and roof nesting sites. Specific efforts to address these difficulties were undertaken, and a separate report is in preparation detailing their recent population trends.

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1996 Report of the North Carolina Bird Records Committee

Harry E. LeGrand, Jr., Chairman
Derb S. Carter, Jr.
Samuel Cooper
Richard J. Davis

John O. Fussell, III
Simon R.B. Thompson
Michael H. Tove

This report enumerates the decisions of the Carolina Bird Club's North Carolina Bird Records Committee during 1996. Four of the species mentioned in this report are results of splits with species already on the state's Official List. Documentation used for voting on these species was generally less than adequate, as the Committee was voting on "old" records. The Committee relied on communication with bird collections staff at the N.C. Museum of Natural Sciences regarding the presence of photographs or specimens (which the Committee did not examine) of these four -- Bicknell's Thrush, Bullock's Oriole, Spotted Towhee, and Nelson's Sharp-tailed Sparrow.

Accepted as Valid. The reported identification is judged to be accurate, and the bird is judged to be of wild origin. Photographs, tape recordings, and written descriptions of all accepted records have been deposited in the N.C. Museum of Natural Sciences.

CAPE VERDE ISLANDS PETREL (*Pterodroma feae*). One was seen in the Gulf Stream off Hatteras on 20 July 1996 by Harry LeGrand, Ned Brinkley, Brian Patteson, and others. The species is already on the Official List; this is the third accepted record to this species. (As of July 1997, the American Ornithologists' Union has given the species the common name of Fea's Petrel.)

BERMUDA PETREL (*Pterodroma cahow*). One was seen by several dozen birders on a pelagic trip off Cape Hatteras on 26 May 1996. The Committee accepted written descriptions from Shawneen Finnegan and Ned Brinkley. Photos taken by Brian Patteson were also accepted. This is the first accepted record of Bermuda Petrel for the state (and for North America). Acceptance of the photos places the species on the Official List. A previous report (in 1993) is Unresolved (Send to Outside Review verdict [NCBRC 1995]); this report has not yet been acted on for a second vote. A report from 1983 was not accepted (NCBRC 1990).

SWAINSON'S HAWK (*Buteo swainsoni*). An immature was seen on the surprisingly late date of 4 December 1995 near Durham by Will Cook and Jeff Phippen. The Committee accepted descriptions submitted by both observers. The

species is already on the Official List; this is the fourth accepted record for the state.

BLACK-TAILED GODWIT (*Limosa limosa*). One was observed at North Pond on Pea Island on several dates in late July 1994 by numerous observers. The Committee accepted details provided by Susan Barrell. This is the second accepted record of this godwit for the state. The first record was documented by photos; thus, the species is already on the Official List.

MEW GULL (*Larus canus*). A first-winter gull, identified as being of the European race (*L. c. canus*), was seen at Cape Hatteras point on 27 December 1995 by Ned Brinkley and Brian Patteson. The Committee accepted the details provided by Brinkley, both to the full species and to the *canus* subspecies. The species is already on the Official List; this is the fourth accepted record. This is the first record accepted to the *canus* race. Two previous records were of birds reported as the *canus* race, and the other reported as the western North American race (*L. c. brachyrhynchus*) race. The other three votes for Mew Gull were taken before the Committee began voting for subspecies as well as the full species. If the species is split in the future, the Committee will vote on the other three records again.

YELLOW-LEGGED GULL (*Larus cachinnans*). An adult was seen and photographed by Robert H. Lewis at Cape Hatteras point on 13 March 1995 (Lewis 1996). The Committee accepted the written description, and it also accepted a series of color photographs provided to the Committee by the observer. (Black-and-white photos printed with the published report were not used in the voting.) Although there had been several previous state reports of Yellow-legged Gull (a recent split from the Herring Gull), this is the first vote taken by the Committee. The Committee tabled a vote on an earlier report because of the lack of experience of Committee members with the species. This becomes the first accepted record for Yellow-legged Gull in the state, and acceptance of both the written description and the photos places the species on the Official List.

BLACK-CHINNED HUMMINGBIRD (*Archilochus alexandri*). An immature male was seen at a feeder on Figure Eight Island in New Hanover County, by Derb Carter, from 4 to 6 November 1994. This is the first accepted record for the state for Black-chinned Hummingbird. A previous sight report was not accepted; several additional Black-chinned reports are being reviewed by the Committee. As there are no accepted photos or specimens, the species is placed on the Provisional List.

CALLIOPE HUMMINGBIRD (*Stellula calliope*). An immature male was present at Fred Thompson's feeder near New Bern from 29 October to 4

November 1995. The Committee accepted photos taken by Thompson and comments on the photos by Nancy Newfield, a hummingbird expert from Louisiana. This is the first accepted record for the state, and acceptance of the photos places the species on the Official List.

LAZULI BUNTING (*Passerina amoena*). An immature male was seen and photographed by numerous observers at Fort Macon State Park in Carteret County from 22 March to early April 1996. The Committee accepted written descriptions by Tony Ziccardi (the original observer) and by Harry LeGrand; photos taken by Derb Carter were also accepted. This is the first record for the state, and acceptance of the photos places the species on the Official List.

SPOTTED TOWHEE (*Pipilo maculatus*). A male was trapped at Fayetteville on 14 February 1957 by Doris Hauser, but it died overnight. The specimen was delivered to the N.C. State Museum (Hauser 1957). This species was recently split from the Rufous-sided Towhee (*P. erythrophthalmus*); this is the first and only known record of Spotted Towhee from North Carolina. It is added to the Official List; the Rufous-sided Towhee is already on the Official List.

NELSON'S SHARP-TAILED SPARROW (*Ammodramus nelsoni*). The Sharp-tailed Sparrow was recently split into this species and the Saltmarsh Sharp-tailed Sparrow (*A. caudacutus*). The Committee accepted the Nelson's Sharp-tailed Sparrow to the Official List based on specimens and numerous sightings. (The Saltmarsh Sharp-tailed Sparrow is considered to already be present on the Official List.)

BULLOCK'S ORIOLE (*Icterus bullockii*). The Northern Oriole was recently split into this species and the Baltimore Oriole (*Icterus galbula*). The Committee accepted the Bullock's Oriole to the Official List based on approximately 10 reports for the state, and the presence (at the N.C. State Museum) of a photograph of a male taken in Raleigh. The Baltimore Oriole is already on the Official List.

Unaccepted Origin. The identification is judged to be accurate, but the bird is judged to be a likely escapee or a member of an unestablished, introduced population, or to have received significant human assistance such that the bird's survival without the assistance would have been very unlikely.

WHOOPEE SWAN (*Cygnus cygnus*). One was seen by numerous observers at Mattamuskeet National Wildlife Refuge in February 1994. There was concern from the Committee that the bird could have come from feral or escaped populations in the northeastern states. However, because the swan was present at a wildlife refuge, in the winter, with wild birds (seemingly paired with a Tundra Swan [*Cygnus columbianus*]), and because the species is a migrant in

Europe, there is certainly the chance that it could have been a legitimate stray. Thus, further action on this record might take place, even though no additional action is required.

Unaccepted Sighting. The bird is judged to be a species other than that reported, or the bird is insufficiently documented to identification of the species reported.

ROSS' GOOSE (*Chen rossii*). An immature blue morph goose seen at Cape Hatteras point during the winter of 1995-96, and reported as a Ross', was not accepted. Some Committee members believed that the bird was a very small blue morph Snow Goose (*Chen caerulescens*), or perhaps a hybrid of Ross' and blue morph Snow geese. Ross' Goose is already on the Official List, but there is no accepted record of the dark phase, extremely rare anywhere, for the state.

WESTERN GULL (*Larus occidentalis*). An adult reported from the coast in February 1996 (Lewis 1996) was not accepted. Neither the written description nor the photos were accepted, as there was a feeling by many Committee members that the bird was a hybrid Great Black-backed Gull (*L. marinus*) x Herring Gull (*L. argentatus*), or at least the possibility of such a hybrid was not convincingly ruled out.

Unresolved. Further consideration by the Committee is needed.

YELLOW-BILLED LOON (*Gavia adamsii*). A bird in winter plumage, identified as an immature, was observed in the ocean along the southern coast in December 1995. The report received a Send to Outside Review verdict; the written description will be sent to at least two outside reviewers. There are no accepted records of this species for North Carolina.

WHITE-CHINNED PETREL (*Procellaria aequinoctialis*). One reported off of Oregon Inlet on two dates in October 1996 received a Send to Outside Review verdict. The written description will be sent to at least two outside reviewers; but a distant photograph of the bird was not accepted. This is the first report of the species for the state. Also, the species is not on the accepted list for North America.

BROWN SKUA (*Catharacta lonnbergi*). One seen and photographed in the Gulf Stream off Hatteras Inlet in late May 1993 received a Send to Outside Review verdict. This is the first report of Brown Skua for the state; a second vote is necessary following at least two outside reviews. The species is also not on the accepted list for North America.

BICKNELL'S THRUSH (*Catharus bicknelli*). A specimen from near Southport, taken in May 1939, resides in the U.S. National Museum collection (Lee 1995). Several Committee members asked that a letter directly from the museum be used for documentation of the record, as opposed to using the 1995 paper for documentation. A second ballot will be held after receipt of such a letter is received. This is a recent split from Gray-cheeked Thrush (*C. minimus*), which is already on the Official List. The Bicknell's Thrush undoubtedly migrates regularly through North Carolina, but the identification of the two species appears to be extremely difficult.

Status of Official List. Prior to these voting results, the Official List for North Carolina stood at 413 species, and the Provisional List stood at 15 species. The voting results listed above yield an Official List of 420 species; added in 1996 are Bermuda Petrel, Yellow-legged Gull, Calliope Hummingbird, Lazuli Bunting, Spotted Towhee, Nelson's Sharp-tailed Sparrow, and Bullock's Oriole. The Provisional List has increased to 16 species, as Black-chinned Hummingbird has been added.

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General Field Notes

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Cayenne Tern at Cape Hatteras, NC

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On 23 September 1994, we observed an adult Cayenne Tern (*Sterna sandvicensis eurygnatha*) at Cape Hatteras point, Dare County, North Carolina. Cayenne Terns, described in detail by Junge and Voous (1955), are usually considered a southern race of Sandwich Tern (*S. sandvicensis*), although the relationship is still unclear (see Buckley and Buckley, 1984). We studied and photographed the bird from 1020-1055 EDT.

Throughout the observation, the bird associated with a small flock of Sandwich and Royal (*S. maxima*) Terns. Initially, the bill size and color caught our attention. The bill was roughly 25% longer than the bills of nearby Sandwich Terns and was distinctly decurved. The bill was dull yellow, with some brighter orange color on the basal third of the bill. Several times during the observation, we thought the bird was slightly larger than a Sandwich Tern, but this difference was slight. The bird otherwise resembled a Sandwich Tern. The white forehead and crown, shaggy, black nape, and white crescent behind the eye indicated the bird was an adult in basic plumage.

There are three subspecies of Sandwich Tern. The nominate race, *sandvicensis*, breeds across Europe and around the Caspian and Black Seas. The North American race, *acuflavida*, breeds in the southeastern U.S. and northern Caribbean. The southern race, *eurygnatha*, breeds in the southern Caribbean and at scattered locations along the Atlantic coast of South America. According to Olsen and Larsson (1995), Caribbean populations of *eurygnatha* are smaller than *acuflavida* but gradually become larger in the southern part of their range. Bill color in *eurygnatha* is highly variable:

Caribbean birds may show considerable black on the bill while all-yellow bills predominate in the southern part of the breeding range in South America (Junge and Voous, 1955). In addition, southern *eurygnatha* have bills that average about 4 mm longer than those of *acuflavida* (Olsen and Larsson, 1995). We therefore concluded this bird was probably from one of the southern South American populations of *eurygnatha* because of the large, all yellow bill and the slightly larger body size. It is also likely that the bird was a male since males have longer bills than females (Junge and Voous, 1955).

This represents the fifth record of Cayenne Tern in North Carolina. The other records are all of single birds from Cape Hatteras: 30 May 1983 (Buckley and Buckley, 1984), 1 September 1986 (*American Birds* 41: 274), 16 August 1988 (*American Birds* 43: 301), and 7 October 1989 (*American Birds* 44: 255).

Acknowledgments

We appreciate the detailed comments provided by Claudia P. Wilds. Her assistance in helping us eliminate Elegant and Lesser Crested Terns was very useful.

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Second Confirmed Record of an Ash-throated Flycatcher for North Carolina

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From approximately 0700-0720 EDT on 24 September 1994, the senior author observed a juvenile Ash-throated Flycatcher (*Myiarchus cinerascens*) near the old Coast Guard station at the north end of Pea Island, Dare County,

North Carolina. The bird was actively foraging in the scrub along the old road south of the buildings. Holmes immediately recognized the bird as a flycatcher of the genus *Myiarchus*. Based on several features, he identified the bird as an Ash-throated Flycatcher. Later that day, Dinsmore and several others relocated the bird on the fence south of the old Coast Guard station. They observed the bird from 1605-1700 EDT and took several photographs of the bird. They were able to confirm the initial identification made by Holmes. The bird was very cooperative, allowing observers to approach within a few meters. Subsequent searches of the area the next morning failed to locate the bird.

The following is a composite description of the bird, written from field notes made by both authors. In general, the bird was a very pale, long-tailed flycatcher, easily recognizable as a member of the genus *Myiarchus*. The throat and breast were pale gray, becoming pale yellow on the lower belly and undertail coverts. The bird lacked the strong contrast between the gray breast and yellow belly seen on most Great Crested Flycatchers (*M. crinitus*). The belly appeared somewhat whiter around the base of the legs. The head was pale gray and slightly darker than the throat. When viewed from directly behind, there appeared to be evidence of a rufous cap, separable from the grayer nape. The mantle and upperwings were rufous colored. The bird had two large, clear, buff/white wingbars. When perched, the outer 4-5 primaries were rufous-colored, the next two primaries were dark, and the inner primaries were rufous. The undersides of the rectrices were entirely rufous-colored. The pattern on the upper surface of the rectrices was studied carefully. On all visible rectrices, the inner webs were bright rufous and most of the outer web and shaft were dull gray. The outer webs were edged with rufous on about the outer one third of the web. The gray color was restricted to the outer web, even at the tip of each feather (no gray color extending onto the inner web at the feather tips). The legs were dark. The bill was mostly dark, except for some paleness along the proximal one third of the cutting edge of the lower mandible and on the proximal one third of the underside of the lower mandible. The bill seemed shorter and thinner than the bill of a Great Crested Flycatcher, although there were none in the vicinity for comparison. Based on the pattern of the rectrices and overall pale plumage, we judged the bird to be a juvenile.

Although all field marks pointed to Ash-throated Flycatcher, we consulted several references in order to eliminate the possibility of a pale Great Crested Flycatcher. The most useful was Pyle *et al.* (1987). Juvenal plumage in *M. cinerascens* and *M. crinitus* is retained through November. The lower mandible of Ash-throated may sometimes be pale at the base. On the rectrices

of juvenile Ash-throated, the outer webs are broadly edged pale rufous. On a juvenile Great Crested, only the outer webs of the central rectrices are edged with rufous. Pyle *et al.* (1987) also give culmen measurements of 13.0-15.5 mm for Ash-throated and 14.2-16.1 mm for Great Crested. The overall pale coloration, pattern of the rectrices, extent of pale color on the lower mandible, and bill size all indicate this bird was a juvenile Ash-throated Flycatcher.

This represents the second accepted record of an Ash-throated Flycatcher in North Carolina (N.C. Bird Records Committee, 1996). The only other record for the state is of a single bird on 16 May 1973 at Raleigh (Silcock, 1975). This species is a regular vagrant to the Atlantic coast, with most states having at least one record. The majority of the records are from fall with a peak in November and December.

Literature Cited

- N.C. Bird Records Committee. 1996. Report of the North Carolina Bird Records Committee. *Chat* 60: 136-141.
- Pyle, P S, N G Howell, R P Yunick, and D F DeSante. 1987. *Identification Guide to North American Passerines*. Slate Creek Press, Bolinas, California.
- Silcock, W R. 1975. An Ash-throated Flycatcher at Raleigh, N.C., with some notes on the occurrence of this species in the eastern United States. *Chat* 39: 40-43.

Northern Harriers Nesting in Carteret County, NC

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Northern Harriers (*Circus cyaneus*) are rare summer residents in coastal North Carolina. A few are seen each year along the immediate coast, especially at Pea Island and Cedar Island National Wildlife Refuges. However, there is very little evidence that they have nested in the state. The only other report of a nest was one containing four eggs on 20 May 1936 near Frisco, Dare County (Pearson, Brimley, and Brimley, 1942). Here we report on single harrier nests found in Carteret County, N.C., in 1993 and 1994.

On 25 May 1993, Dinsmore and three others observed a pair of harriers in courtship flight over the village at the north end of Portsmouth Island. Dinsmore returned to the area on 2 June and after a brief search flushed a female harrier off a nest containing five eggs. The nest was along the edge of a tidal salt marsh dominated by *Juncus roemerianus* and *Spartina patens*. He photographed the nest and left immediately to minimize further disturbance. The nest was not rechecked, and its fate is unknown.

On 5 May 1994, Williams observed a single adult harrier carrying nesting material over the tidal salt marsh at Cedar Island National Wildlife Refuge. After a brief search, the bird was flushed from a nest containing two eggs. The nest was a shallow cup of grass 40 cm in diameter and placed 15 cm above the ground. Dominant vegetation near the nest was *Juncus roemerianus*, *Spartina cyanosuroides*, and *Spartina patens*. The nest contained three eggs on 6 May and one egg and two young on 28 May. Three young were present in the nest on 9 and 16 June. On 18 July the nest was empty, but at least two fledged juveniles were nearby.

Literature Cited

- Pearson, T. G., C. S. Brimley, and H. H. Brimley. 1942. *Birds of North Carolina*. N. C. Dept. of Agriculture, Raleigh.



Northern Harrier Nest
Portsmouth Island, NC, 2 June 1993
Photo by Stephen J. Dinsmore



Northern Harrier Nest
Cedar Island NWR, 5 May 1994
Photo by Steven G. Williams



**Northern Harrier Nestling
Cedar Island NWR, 9 June 1994
Photo by Steven G. Williams**

First Documented Record of a Swainson's Hawk in North Carolina

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On the morning of 3 October 1993, Dean was birding in the vicinity of the old Coast Guard station on the south side of Oregon Inlet. On the previous weekend, the Carolina Bird Club had held its fall meeting on the Outer Banks, and several uncommon birds were found near the station. On the third, however, very few birds were present despite favorable northwest winds of 15-20 knots.

At approximately 0730 EDT Dean was leaving the area when he noticed a large raptor sitting on the crossbar of one of the telephone poles alongside the road. It seemed to be sheltering itself from the stiff wind. The bird was facing away from him and he could see that it lacked the pale scapular marks of a Red-tailed Hawk. The head appeared pale and did not have the "helmeted" look of a Red-tailed. The back was dark with pale spotting. The bill was not visible. Dean studied the bird closely for several minutes and noted the following additional field marks. The breast was buff-colored and lacked a breast band. The upper breast was coarsely streaked. After several minutes, the bird suddenly and rapidly flew east over the dunes and disappeared. In flight, the wing linings were pale and the flight feathers appeared darker. Based on these observations, he identified the bird as an immature Swainson's Hawk (*Buteo swainsoni*). Dean searched the area without relocating the bird. After 10-15 minutes he gave up and headed south towards Pea Island National Wildlife Refuge, thinking that the bird may have moved that direction. A short time later, he met Dinsmore and Susan Grove. All of us immediately returned to the old Coast Guard station, where we unsuccessfully searched for the bird for half an hour.

At that time, Dean headed south to watch for the bird from the south dike platform of Pea Island National Wildlife Refuge, while Dinsmore and Grove went north across the inlet. At 0921 EDT, Dinsmore and Grove were driving south past the old Coast Guard station when they spotted a raptor perched on a telephone pole in the same location where Dean had first seen the bird. They stopped and quickly confirmed that the bird was an immature Swainson's

Hawk. They studied and photographed the bird until 0944. The following description was written during the observation by Dinsmore.

The bird was clearly a *Buteo* because of the relatively broad wings and short, broad tail. The bird appeared to be roughly the size of a Red-tailed Hawk, though there were none there for direct comparison. When perched, the head was noticeably paler than the wings and back. The bird had a distinct white eyebrow and a dark whisker. The crown was dark. The bill was dark and decidedly small. The upperwings and back were dark brown and mottled with light brown/buff spots. In flight, these paler spots were seen to be confined to the secondary coverts on the upperwing. The throat was buff-colored. There was extensive dark brown color on the upper breast, forming a nearly complete bib. The rest of the breast and belly were buff-colored with smaller, dark brown spots on the lower breast. Feathers on the upper leg were also buff-colored with dark tips. The undertail coverts were buff/white and unmarked. The legs were yellowish. The bird made several short flights between telephone poles, allowing detailed observations of the wing and tail patterns. The bird appeared long-winged in flight, probably because the wings were narrower and more pointed than the wings of a Red-tailed Hawk. The underwing coverts were a rich buff color with obvious dark spots at the tips of many of the feathers. Both surfaces of the flight feathers were dark brown and unmarked. The contrast between the undersides of the flight feathers and wing coverts was not as pronounced as on an adult Swainson's Hawk, but was still evident. The tail pattern was distinct: rectrices dark, a large white patch on the rump and uppertail coverts (similar to the rump patch of a Northern Harrier), and underside of rectrices lightly barred. Also, the wingtips extended nearly to the tip of the tail on the perched bird, an indication of how long-winged the bird was. At approximately 1100, Dean again observed the bird perched on a telephone pole about 2 miles south of the old Coast Guard station. Dinsmore and Grove observed the bird soaring high over Avon between 1334 and 1338. The bird was not seen again.

This is the third accepted record of a Swainson's Hawk in North Carolina (N.C. Bird Records Committee, 1995), the first to be confirmed by a photograph (*American Birds* 48:160). Two previous sight records have been accepted by the North Carolina Bird Records Committee: single birds on 11 October 1965 at Pea Island, Dare Co. (Potter and Sykes, 1980) and 21 March 1982 near Garner, Wake Co. (Tarbet and Coburn, 1982). Two additional sight records of single birds have not been accepted by the committee: 9 December 1979 in Craven Co. (Cox and Ball, 1980) and 1 February 1980 in Tyrrell Co. (Potter and Sykes, 1980).

Literature Cited

- Cox, G, and E Ball. 1980. Swainson's Hawk in North Carolina. *Chat* 44:76.
- N.C. Bird Records Committee. 1995. Report of the N. C. Bird Records Committee 1994. *Chat* 59:85-89.
- Potter, E F, and P W Sykes, Jr. 1980. A probable winter record of Swainson's Hawk from Tyrrell County, N. C., with comments on a fall 1965 sighting from the Outer Banks. *Chat* 44:76-78.
- Tarbet, D D, and K Coburn. 1982. Sighting of a Swainson's Hawk in North Carolina. *Chat* 46:80-81.

Townsend's Warbler on the Coast of North Carolina

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Just before noon on 7 November 1992, Roger McNeill was birding along the northern dike of North Pond at Pea Island National Wildlife Refuge, Dare County, NC. The weather was cool and overcast, with a still wind. Among the loose flock of Yellow-rumped Warblers (*Dendroica coronata*) that were flycatching from the shrubbery was a bird with bright yellow on the face that also made a sally from the bushes. McNeill noticed the bright circle of yellow around the face that also extended down the breast, and he then realized that the bird was a Townsend's Warbler (*D. townsendi*). The yellow was offset by a black center spot in the shape of a football. The yellow was in the basic shape of the "C" used as a symbol for the Cincinnati Reds baseball team (*i.e.*, pointed at the closed end of the "C"). Toward the bottom of the cheek patch, near the base of the bill, was a yellow patch shaped like a crescent moon. Black was seen on top of the head as well as mottled on the throat, and thick black streaks were present down the side of the breast. The black triangle across the breast came to a thin point at the base of the bill and was broad at the base of the throat. The yellow extended halfway down the breast past the throat line and extended into the black lines down the side. The lower breast and belly were white. Two bold, thick wing bars were present; both were gray-white in color and about the same size, just slightly offset. The top of the back was olive and

longitudinally streaked. The tail was not observed. The bill was black, whereas the eye color was not noted. The bird's basic shape was that of a Yellow-rumped Warbler, and no differences were noted in size with that species.

The bird was observed pitching into a Black Cherry (*Prunus serotina*). McNeill "pished" briefly before the bird popped into view. He observed this adult male Townsend's Warbler for 30 seconds as close as 15 feet. He removed his camera from his backpack and was able to obtain one identifiable photograph of the bird.

There is a previous report of Townsend's Warbler for North Carolina -- of at least two birds in Swain County on 24 April 1975 (Roe 1978). An earlier records committee accepted this report and placed the species on the Provisional I list (North Carolina Records Committee 1980). However, the current N.C. Bird Records Committee had "concerns about the sighting, some members believing that Black-throated Green Warblers (*D. virens*), common in that area at that time of year, were misidentified, despite descriptions that are seemingly those of Townsend's" (North Carolina Bird Records Committee 1990, p. 58). This latter committee considered the report as "Unresolved" (North Carolina Bird Records Committee 1990, p. 57); it has not acted on the report since that decision in 1990.

The N.C. Bird Records Committee accepted the report made by the senior author on a Rare Bird Sighting Report form, and the Committee also accepted a color photograph, which places the species on the Official List (North Carolina Bird Records Committee 1994). There are thus two reports for North Carolina, only one of which has been accepted by the present committee.

A copy of the Rare Bird Sighting Form (which contained a color sketch of the warbler) and a color photograph have been given to the N.C. State Museum of Natural Sciences for documentation.

Literature Cited

- North Carolina Bird Records Committee. 1990. Report of the North Carolina Bird Records Committee 1990. *Chat* 54:53-58.
- North Carolina Bird Records Committee. 1994. Report of the North Carolina Bird Records Committee 1993. *Chat* 58:85-88.
- North Carolina Records Committee. 1980. Supplement to the 1978 Checklist of North Carolina Birds. *Chat* 44:59-61.
- Roe, W G. 1978. Townsend's Warbler in Western North Carolina. *Chat* 42:85.

White-winged Tern in North Carolina

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At approximately 2:20 pm on 13 August 1994, the senior author observed an adult White-winged Tern (*Chlidonias leucopterus*) in advanced molt at Bodie Island, Dare County, NC. The bird was feeding in and flying over the ponds, dikes, and marshes at the Bodie Island Lighthouse pond. It was in the company of four Black Terns (*C. niger*), two of which were in almost full alternate plumage and two of which were in advanced molt. He observed the White-winged Tern with 8x40 binoculars for approximately five minutes, at distances from 10 to 130 feet, allowing excellent viewing. Several additional birders saw the tern on that date, including Roger McNeill, Lex Glover, and Bert Fisher; it could not be found on 14 August or later dates.

The following features were seen on the tern when in flight: (a) a completely white rump; (b) a barely notched tail, which was extremely pale gray above and pure white below; (c) the presence of some black feathering in the wing lining; and (d) the complete lack of a dark bar on the sides of the breast which distinguished it easily from the molting Black Terns with which it was flying. In addition, the marginal and lesser coverts still appeared paler than the rest of the upper wing feathers, despite the stage of molt the bird was in. This paleness, however, was definitely grayer than other birds the senior author has seen elsewhere in full alternate plumage. The bird's legs and feet were a dull orange-red, noticeably brighter than the dull, dark ashened-red legs and feet of the other terns in the group.

In addition to the features above, the senior author noted the following marks on the White-winged Tern. The bill was black. The forehead was white; the crown was white at the front, blending to a streaky black toward the nape. The base of the nape was white, giving a bridled appearance. The bird had a fairly distinct black eye-stripe. The mantle, back, and scapulars were mostly gray with a few scallop-shaped black markings on the scapulars. The underparts were pure white with the exception of a few very pale and indistinct gray smudges on the sides and belly and one distinct dark patch on the left flank. The marginal and lesser coverts appeared slightly lighter in color compared with the uniform gray of the rest of the upper wing surface. The

outer three primary feathers were quite dark. The underwing was basically white with black tips and bases to some of the feathering in the wing lining. The undersurface of the flight feathers appeared light gray with a darker color through the primaries.

Mathieson had considerable prior experience with White-winged Terns, as the species is an uncommon to locally common austral summer visitor to Australia. He has seen the species in alternate and in basic plumages as well as many variations in between these two plumages.

This is the first record of White-winged Tern that the N.C. Bird Records Committee has accepted for North Carolina. Because no photographs were obtained, the species has been placed on the Provisional List (*Chat* 60:138). This committee had failed to accept two previous reports of White-winged Tern (*Chat* 56:54, *Chat* 59:87).

CAROLINABIRDS

Carolinabirds is an Internet e-mail discussion group about birds and birding in the Carolinas. Subscribers frequently post sightings to it similar to those found in Briefs for the Files, but unusual behavior receives more attention. Subscriptions are free. To subscribe, address an e-mail message to <majordomo@acpub.duke.edu>. Don't fill in the subject line. As your message, simply put, "subscribe carolinabirds" (without the quotes). You will receive a confirmation and more information shortly. Submissions for Briefs for the Files should be sent directly to Ricky Davis.

BRIEFS FOR THE FILES

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(All Dates Spring 1997)

*Note: I rely in part on sightings reported in Carolinabirds. Please don't, however, rely on me to pick up your sightings from Carolinabirds. Instead, please **also** send your sightings directly to me.*

COMMON LOON: Good migration counts included 131 flying past Ocracoke Inlet, NC, April 30 (Merrill & Ida Lynch) and 30 inland at Moss Lake, Cleveland County, NC, April 17 (*fide* JoAnn Martin).

EARED GREBE: The wintering Eareds at the Goldsboro, NC, Wastewater Treatment Plant remained until at least May 3, when one was in full breeding plumage (Eric Dean). Another one in breeding plumage was found on Coddle Creek Reservoir west of Concord, NC, April 13 (Taylor Piephoff). In South Carolina two to three were at the Savannah Spoil Site March 13-28 as noted by Steve Calver; and two were at North Inlet, Georgetown County, April 27 to May 4 (Wendy Allen, *fide* Jack Peachey).

FEA'S PETREL: Only one was found during this spring's round of pelagic trips from the North Carolina Outer Banks; off Oregon Inlet May 23 (Brian Patteson *et al.*).

HERALD PETREL: An excellent number of reports of this rare but regular pelagic species was found this spring. Out of Oregon Inlet, NC, one was found May 24, two were seen May 25, and one was found June 1 (Mike Tove *et al.*). From Hatteras Inlet, NC, single birds were seen May 24, 25, and June 1 (Brian Patteson *et al.*).

MANX SHEARWATER: Another species found in better than average numbers this spring, a total of five different individuals were seen migrating past Cape Hatteras point during the period May 23-25 (m. ob.). Much rarer was the Manx seen out of Murrells Inlet, SC, May 23 (Jack Peachey), providing one of the very few records for that state.

STORM-PETRELS: Peak counts this spring included 66 Band-rumpeds off Oregon Inlet, NC, June 1 (Mike Tove *et al.*) and 26 Leach's out of Hatteras

Inlet, NC, May 24 (Brian Patteson *et al.*). Also the best count of Wilson's from Cape Hatteras point was 131 on May 31 (Bob Holmes, Wade Fuller).

WHITE-TAILED TROPICBIRD The few reports of this species included one out of Hatteras Inlet, NC, May 31 (Brian Patteson *et al.*) and one out of Oregon Inlet, NC, June 1 (Mike Tove *et al.*).

RED-BILLED TROPICBIRD: The rare Red-billed was found once this spring: an adult was found off of Hatteras, NC, on the early date of March 29 (Spurgeon Stowe).

AMERICAN WHITE PELICAN: Three were seen in flight over the Nags Head Causeway, Manteo, NC, March 30 (Wendy and John Stanton) for the only report.

DOUBLE-CRESTED CORMORANT: This species continues to increase in the inland portions of North Carolina. This spring a record inland one-day count of 700+ was had at Falls Lake April 20 (Ricky Davis). Just how much can the numbers continue to rise?

ANHINGA: Some of the inland reports included one early at Carolina Sandhills NWR, SC, April 8 (Peter Range); one at Trenton, Jones County, NC, April 15 (Nell Moore); one in Mecklenburg County, NC, May 2 (Marek Smith); and one in Greenville, NC, April 26 (*fide* Taylor Piephoff). Also the discovery of three nests in N. Augusta, Aiken County, SC, in early May (Anne Waters *et al.*) not only constituted the first breeding record for the county but was also quite far inland.

GREAT BLUE HERON: A newly located inland heronry included six nests at upper Falls Lake, NC, this spring (Will Cook, Franchesca Perez). This species is increasing as breeders into the piedmont of North Carolina, and observers are asked to be aware of Great Blues in their area during the breeding season.

BLACK-CROWNED NIGHT-HERON: One was uncommon at Landrum, SC, April 10 as noted by Simon Thompson.

YELLOW-CROWNED NIGHT-HERON: Four nests were found at a colony on the UNC-G campus, Greensboro, NC, this spring (Herb Hendrickson). Other inland reports included one at Chapel Hill, NC, May 1 (Mike and Lois Schultz), one at Charlotte, NC, May 3 (*fide* Taylor Piephoff), and one near Florence, SC, May 10 (Steve Patterson).

SNOWY EGRET: Uncommon spring inland reports involved two at Jordan Lake, NC, April 5 (Doug Shadwick) and one at Raven Rock State Park, NC, May 3 (*fide* Paul Hart).

CATTLE EGRET: One was early and locally unusual in Wayne County, NC, March 12 as noted by Eric Dean.

GLOSSY IBIS: Rare inland in spring, Glossies were reported twice in the Carolinas. One was in flight over the Silver Bluff Audubon Sanctuary, Jackson, SC (Paul Koehler, *fide* Anne Waters), and two were over Chapel Hill, NC, April 17 (Jeremy Hyman, Todd Hass).

WOOD STORK: One provided a very rare spring report for the Silver Bluff Sanctuary, Jackson, SC, when it was noted in flight April 20 (Anne Waters *et al.*).

GREATER WHITE-FRONTED GOOSE: One remained from the winter season in Transylvania County, NC, where it was at Deerlake until at least March 17 (Betty McIlwain).

GREATER SCAUP: The flock (40+) present at Brier Creek Reservoir, Wake County, NC, during the winter season remained until at least mid-March (sev. ob.).

COMMON EIDER: An imm. male was at the Avon, NC, pier March 8 (Ricky Davis), and a female was present at the Morehead City, NC, waterfront until early May (m. ob.)!

SURF SCOTER: A good inland report involved a flock of five at Lake Leroy, Oconee County, SC, March 22 as noted by Craig Harper and Kevin Russell, (*fide* Dennis Forsythe). Also one was very late at Cape Hatteras point, NC, May 25 (Pat Moore *et al.*).

OLDSQUAW: Locally uncommon were two at Huntington Beach State Park, SC, March 4 (Bert Fisher) and one at Falls Lake, NC, March 18 (Tom Howard).

HOODED MERGANSER: Locally interesting was the female found on Lake Santeetlah, Graham County, NC, on the late date of May 31 (Charlotte Goedsche, Cynthia Jones). It was most likely a non-breeding wanderer, but this species breeds somewhere in the Carolinas almost every year.

COMMON MERGANSER: One was found on Jordan Lake, NC, May 10 (*fide* Will Cook). Amazingly, this species was also found here in the springs of 1991, 1993, and 1995! Quite possibly the same individual is involved.

RED-BREASTED MERGANSER: Some of the better inland reports included 40+ at Deerlake, Transylvania County, NC, March 19 (Tom Joyce); ten at Falls Lake, NC, April 20 (Ricky Davis); three at Lake Pinehurst, NC, May 10 (Dick Burk); fly-overs at Florence, SC, April 2, 4, and 20 (Steve Patterson); and one at Moss Lake, Cleveland County, NC, April 18 (Pat Wilkison, JoAnn Martin).

SWALLOW-TAILED KITE: Reports of this species were fewer than in past springs, with only two from North Carolina. An individual was seen near the

Trent River, Jones County, May 8 (Nell Moore), and one was in Brunswick County during May (Jim Parnell).

MISSISSIPPI KITE: This species, however, continues to be found with increasing regularity. Some of the more interesting reports include: one near the mountains at Tryon, Polk County, NC, May 8 (Simon Thompson); one at Jordan Lake, NC, May 10 (*fide* Will Cook); one at Raleigh, NC, May 10 (*fide* Susan Campbell); two at Cedar Island, NC, May 15 (John Fussell); two at Buxton, NC, May 24 (Marcia Lyons); and two at Pea Island, NC, May 9 (Steve Olson). Other North Carolina reports included one at New Bern May 15 (Bob Holmes), one at Pee Dee NWR May 17 (Dick Burk *et al.*), and one at Greenville May 11 & 16 (Howard Vainwright, Russ and Patricia Tyndall).

NORTHERN HARRIER: One was late inland at Fayetteville, NC, May 10 as noted by Morris Whitfield, *fide* Phil Crutchfield.

SHARP-SHINNED HAWK: One was found in n. Granville County, NC, May 24 (Harry LeGrand), rather late for a migrant. Could it have been a locally summering bird?

COOPER'S HAWK: Probable local breeders, a pair was seen near Apex, NC, May 31 by Merrill Lynch. Possibly a late migrant was the individual seen at Jockey's Ridge, Dare County, NC, May 11 (John Fussell).

BROAD-WINGED HAWK: Interesting reports of this species included one near Holden Beach, NC, May 18 (Jeff Pippen, Harry LeGrand) and one at Santee NWR, SC, May 26 (Dennis Forsythe). Also a rare black morph Broad-winged was seen near Jordan Lake, NC, May 18 by Rob Gluck, *fide* Will Cook. This morph is very rare in the east, and amazingly this was the second local sighting!

ROUGH-LEGGED HAWK: Always rare in the Carolinas, a Rough-legged was found at RDU airport, Wake County, NC, March 7-8 (Dough Shadwick, Will Cook *et al.*) This species is normally found only during the winter, so the spring report was quite unusual.

GOLDEN EAGLE: The only report was of one in the Lake Toxaway, NC, area April 9 as noted by Doc Murphy, *fide* Norma Siebenheller. This area has been the most consistent for Golden Eagle reports the last several years.

MERLIN: Inland sightings included singles at Raven Rock State Park, NC, April 19 (Dick Burk), Brevard, NC, April 23 (Betty McIlwain), Florence, SC, April 21 (Steve Patterson), and Southern Pines, NC, May 10 (Dick Burk).

PEREGRINE FALCON: Unusual was one at N. Augusta, SC, April 8 (Carol Eldridge); and one was a late migrant at Pea Island NWR, NC, May 25 (Taylor Piephoff).

SORA: One present from the winter season at Jackson Park, Hendersonville, NC, was seen until mid-May (sev. ob.), and other mountain reports included one at Pisgah Forest, NC, until mid-May (Norma Siebenheller) and one at Valle Crucis, NC, May 21 (Merrill Lynch, Vaughn Morrison).

COMMON MOORHEN: One was locally rare at the Little Creek Impoundment near Chapel Hill, NC, April 26-28 (Carol Williamson).

LESSER GOLDEN-PLOVER: This species is very rare anywhere in the Carolinas during the spring. This year one-two were at Hooper Lane, Henderson County, NC, March 29-31 (Wayne Forsythe, Simon Thompson, *et al.*), one was near Pendleton, SC, April 26 (Ruth Young *et al.*), and one was at the Savannah Spoil Site, Jasper County, SC, April 8 (Steve Calver).

SEMPALMATED PLOVER: Some of the better inland reports of this species included: 14 at Rocky Mount, NC, May 17 (Ricky Davis); five at Brier Creek Res., Wake County, NC, May 8 (Jeff Pippen); three at Ecusta, Transylvania County, NC, May 3 (Norma and Bill Siebenheller); and two at Jackson Park, Hendersonville, NC, April 28 (Wayne Forsythe, Simon Thompson). Singles were also found near Fayetteville, NC, May 10 (Phil Crutchfield) and in Lattimore, Cleveland County, NC, May 6 (JoAnn Martin).

BLACK-NECKED STILT: Three were locally unusual at Sneads Ferry, NC, April 22 (Nell Moore) and one inland at the Goldsboro, NC, Wastewater Treatment Plant May 31 (Eric Dean) provided a very rare report away from the coast. There are only a couple of previous inland records for this species.

SPOTTED SANDPIPER: A pair was observed displaying and courting at the Cooper Wastewater Treatment Plant, Winston-Salem, NC, May 24 (Ramona Snively, Regina Burt, Linda Davis). This is the same location where nesting occurred in 1993!

WILLET: Always noteworthy inland, one was seen at Woodlake near Southern Pines, NC, May 4 (Tom Howard).

UPLAND SANDPIPER: This species staged one of the better spring migrations in the Carolinas this spring. Six were at Hooper Lane, Henderson County, NC, April 20 (Wayne Forsythe, Marilyn Westphal); five were found at the Cherry Hospital, Goldsboro, NC, April 26 (Eric Dean); four were at Blackville, SC, April 13 (*fide* Taylor Piephoff); four were at the Orangeburg, SC, Sod Farm April 5 (Robin Carter, Caroline Eastman); four were found at Townville, SC, May 5 (Vince Pack); two were near Tryon, NC, April 24 (Simon Thompson); and one was near Cary, NC, May 4 (Ricky Davis).

WHIMBREL: An amazing count of 1,900 Whimbrels was had at Edisto Beach, Colleton County, SC, May 20 by Steve Patterson. This species has

recently been found to be using parts of the South Carolina coast as a major staging area.

SEMIPALMATED SANDPIPER: One was locally unusual at Needmore, Spartanburg County, SC, May 10-11 (Matthew, Lyle, and David Campbell). Also 12 at Rocky Mount, NC, May 17 (Ricky Davis) provided a good inland count for the spring season.

WESTERN SANDPIPER: Five at Needmore, Spartanburg County, SC, (Matthew, Lyle, and David Campbell) provided an excellent inland spring total. Also four in N. Augusta, SC, May 10 (Anne Waters *et al.*) was a good inland count. Other inland reports included two in Rocky Mount, NC, May 17 (Ricky Davis) and one at Hooper Lane, Henderson County, NC, May 3 (Wayne Forsythe, Marilyn Westphal).

WHITE-RUMPED SANDPIPER: Inland reports included six at Rocky Mount, NC, May 17 (Ricky Davis), five at N. Augusta, SC, May 10 (Anne Waters *et al.*), three in Nash County, NC, May 5 (Ricky Davis), two in Charlotte, NC, May 3 (Taylor Piephoff), and two in Greenville, NC, May 4 (John and Paula Wright).

BAIRD'S SANDPIPER: This species is normally absent from the Carolinas during its northward migration. This year was an exception, with two reports. One was seen well at Jackson Park, Hendersonville, NC, May 4 (Wayne Forsythe, Simon Thompson, Larry Farer, Peggy Franklin, Marilyn Westphal). The other was a well-described bird found at Needmore, Spartanburg County, SC, May 10-11 (Matthew, Lyle, and David Campbell). Observers need to be very thorough and cautious when reporting spring Baird's in the Carolinas.

PECTORAL SANDPIPER: A count of 50 at Tryon, NC, April 24 (Simon Thompson) was an excellent spring total.

DUNLIN: Inland Dunlins included one at Hooper Lane, Henderson County, NC, May 3 (Wayne Forsythe, Marilyn Westphal) and one at Rocky Mount, NC, May 11 (Ricky Davis).

STILT SANDPIPER: The only inland report received was of one in n. Mecklenburg County, NC, May 13, as noted by Taylor Piephoff.

SHORT-BILLED DOWITCHER: Four at Hooper Lane, Henderson County, NC, May 3 (Wayne Forsythe, Marilyn Westphal) provided the only inland report this spring.

CURLEW SANDPIPER: This rare but regular species was found once; one was at North Pond, Pea Island, NC, May 25 (Bruce Crider, Ken Lambert, *fide* Dwight Cooley).

WILSON'S PHALAROPE: Reports of this species were up this spring. Single birds were at Pea Island NWR, NC, April 7 (Dwight Cooley) and May 7 (*fide*

Dwight Cooley). Always exciting inland, one was in Greenville, NC, May 4 (John and Paula Wright), and one was at Rocky Mount, NC, May 11 (Ricky Davis). Undoubtedly the best report involved the 37(!) at the Savannah Spoil Site, Jasper County, SC, May 3 (Steve Calver), most likely a record total for the Carolinas in spring.

LONG-TAILED JAEGER: Offshore reports included one off of Hatteras Inlet, NC, May 25 (Brian Patteson *et al.*), two out of Oregon Inlet, NC, May 30 (Patteson), and one again out of Oregon Inlet May 31 (Mike Tove *et al.*). Onshore at Cape Hatteras point, singles were seen May 24 (Ned Brinkley *et al.*) and May 25 (*fide* Taylor Piephoff).

SOUTH POLAR SKUA: The only ones found on the pelagic trips were singles out of Hatteras Inlet May 24 & 31 (Brian Patteson) and Oregon Inlet May 24 (Mike Tove). Two were found out of Hatteras Inlet June 1 (Patteson).

LITTLE GULL: This species normally is found only along the inshore waters and beaches, thus a big surprise was the one found over the Trent River at New Bern, NC, March 8 (John Fussell).

RING-BILLED GULL: One was quite late at Moss Lake, Cleveland County, NC, May 30, as noted by JoAnn Martin.

ICELAND GULL: One stayed at Cape Hatteras point on into spring, when it was noted March 8 (Bob Holmes *et al.*) and again on April 19 (Russ and Patricia Tyndall).

LESSER BLACK-BACKED GULL: An immature March 1 and an adult March 8 were seen in the Durham, NC, area (Les Todd) for the only inland spring reports.

GLAUCOUS GULL: An immature lingered at Cape Hatteras point this spring with it being seen on April 19 (Russ and Patricia Tyndall) and again May 6 (Marcia Lyons).

GREAT BLACK-BACKED GULL: One was late for an inland site when it was seen at Goldsboro, NC, May 3 (Eric Dean).

CASPIAN TERN: Interesting inland reports included an amazing 54(!) at Falls Lake, NC, April 20 (Ricky Davis), 16 at Dreher Island State Park, SC, April 19 (Lex Glover), two at Moss Lake, Cleveland County, NC, April 18 (JoAnn Martin, Mike Davis), and one at Lake Junaluska, Waynesville, NC, April 11 (Don Hendershot).

ROYAL TERN: Two inland at Silver Bluff Audubon Sanctuary, Jackson, SC, April 20 (Vernon Waters, Larry and Carol Eldridge) were quite rare, especially since no storms were responsible for bringing them that far away from the coast.

LEAST TERN: Another unexplainable inland tern was the Least found at Lake Wallace, Bennettsville, SC, May 31 (Robin Carter, Caroline Eastman).

COMMON TERN: The only inland report was of one at Jordan Lake, NC, May 4 (Ricky Davis).

FORSTER'S TERN: Good inland reports of Forster's included 20 at Dreher Island State Park, SC, April 19 (Lex Glover), one near Mills River, Henderson County, NC, May 3 (Ira Weigley), one at Moss Lake, Cleveland County, NC, April 18 (JoAnn Martin, Mike Davis, Pat Wilkison), and one at Lake Wallace, Bennettsville, SC, May 31 (Robin Carter, Caroline Eastman).

ROSEATE TERN: This rare species was once again noted at Cape Hatteras point with from one to three present May 13 -31 (sev. ob.).

ARCTIC TERN: Good counts of this species were found on pelagic trips this spring. Out of Hatteras Inlet, NC, two were seen May 25, one was seen May 31, and eight were found June 1 (Brian Patteson *et al.*). Out of Oregon Inlet, NC, two were found May 30 (Patteson), and ten were seen June 1 (Mike Tove *et al.*).

SOOTY TERN: The Sooties that have been present at Cape Hatteras point the last several springs moved to Hatteras Inlet spit this year. One to two were there May 23 on into summer (sev. ob.).

BLACK TERN: Inland migrants were few and far between this year. One was south of Fayetteville, NC, May 10 (Phil Crutchfield), and one was at the Timmonsville, SC, sewage ponds May 10 (Steve Patterson).

RAZORBILL: The only spring report was of two flying north past Coquina Beach, NC, March 8 (Ricky Davis).

EURASIAN COLLARED-DOVE: This species continues to spread across the Carolinas. Ira Weigley noted one this spring far away from the coast at Jackson Park, Hendersonville, NC, May 7.

COMMON GROUND-DOVE: A new "inland" site for the species was discovered in South Carolina with six being found near Allendale, Allendale County, May 18 (Robin Carter, Caroline Eastman). As this species continues to decline in the Carolinas, any sighting is noteworthy.

BLACK-BILLED CUCKOO: This species staged one of its best spring migrations through the Carolinas this year. Reports were widespread and included one near Columbia, SC, May 6 (David Dobson, *fide* Lex Glover); one at Jackson Park, Hendersonville, NC, May 4 (Wayne Forsythe *et al.*); two near Brevard, NC, May 1 (Betty McIlwain); one near Asheville, NC, May 7 (Wayne Forsythe); one in Ashe County, NC, May 18 (Ricky Davis); two or more near Piney Creek, Alleghany County, NC, during May (James Coman); and one in Chatham County, NC, May 18 (Magnus Persmark). The real highlight for this

species occurred in Dare County, NC. There were large numbers found on the mainland portion of the county this May. Merrill Lynch counted eight Black-billeds in the Alligator River NWR along the Milltail Creek BBS route May 25. John Fussell found at least 16 different singing birds in the Air Force Bombing Range area of the county from May 17 until the end of the period. What is especially interesting is that several of these were found on into June.

SHORT-EARED OWL: One was an unexpected surprise near Rocky Mount, NC, when it was seen flying around a sand pit east of town April 6 (Ricky Davis). It was not known if this was a wintering bird or a migrant.

CHUCK-WILL'S-WIDOW: One was quite rare and out of range along the Tamassee Gap Road, Transylvania County, NC, May 9 (Tom Abbott, *fide* Norma Siebenheller).

WHIP-POOR-WILL: One was early when heard calling near Apex, NC, March 22 (Merrill Lynch).

RED-HEADED WOODPECKER: One was out of place at North Pond, Pea Island NWR, NC, May 12 (Dwight Cooley, Neill Yelverton). This species does not breed anywhere nearby, and spring migrants are truly unusual at that coastal site.

OLIVE-SIDED FLYCATCHER: The only report received this spring involved one bird near Piney Creek, Alleghany County, NC, May 10 (*fide* James Coman). Olive-sideds have been reported less frequently the past couple of years in the Carolinas. One hopes this trend will not continue too much longer.

WILLOW FLYCATCHER: Some of the better reports included one near Moore, Spartanburg County, SC, May 10 (Matthew Campbell); one at Tryon, NC, May 22 (Simon Thompson); and the amazing occurrence of two at Mason Farm, Chapel Hill, NC. One was found May 5 (Haven Wiley), and it was joined by a second one May 17; with both remaining until the beginning of June (m. ob.)!

EASTERN PHOEBE: A pair again nested near Trenton, Jones County, NC, in May (Nell Moore). This area is at the eastern limit of the normal breeding range for the species in North Carolina. Also one was an unusual and late migrant at North Topsail Beach, NC, May 17 (Moore).

EASTERN KINGBIRD: A count of 100(!) at North Pond, Pea Island NWR, NC, May 3 (Dwight Cooley) was impressive for the spring season.

GRAY KINGBIRD: Reports this spring included one at the Savannah Spoil Site, Jasper County, SC, May 15 (Steve Calver); one at Edisto Beach, SC, May 25 (Sid Gauthreaux, Jr., Carroll Belser, Robert Eggleston); one at Buxton, NC, May 26-28 (sev. obs., *fide* Taylor Piephoff); and this species returned to Ft.

Caswell, NC, again this spring when one was found May 18 sitting on a nest (Harry LeGrand, Jeff Pippen).

SCISSOR-TAILED FLYCATCHER: Always noteworthy in our region, one was seen briefly at an impoundment near Chapel Hill, NC, April 12 (Len Pardue *et al.*). It was observed flying away to the east and was never seen again.

HORNED LARK: Three territorial larks were found west of Estill, Hampton County, SC, April 5 (Robin Carter, Caroline Eastman). This is the farthest south that probable breeding has been found in the state.

BANK SWALLOW: One was a late migrant at Pea Island, NC, May 20 as noted by John Fussell.

TREE SWALLOW: A nest with six eggs was found in a bluebird box near Beaver Lake, Asheville, NC, May 25 by Simon Thompson. Actual nestings of this species in the Carolinas are few and far between, and all potential breeding sites need to be monitored.

WHITE-BREASTED NUTHATCH: A pair was found along the Milltail Creek BBS, Dare County, NC, May 25 (Merrill Lynch). This species is very rare in that part of the state.

BROWN-HEADED NUTHATCH: Two were locally unusual at Beaver Lake, Asheville, NC, May 25 (Ira Weigley). This area is definitely out of the normal range for the species in the state.

MARSH WREN: Two were present in Transylvania County, NC, April 27 until early May (Jennifer Wren, Bill and Norma Siebenheller), providing a locally rare report.

THRUSHES: Interesting thrush reports included: a peak of six Veeries on Roanoke Island, NC, May 11 (Jeff Lewis); a Gray-cheeked at Raleigh, NC, May 26 (Harry LeGrand); a Gray-cheeked was banded at Carolina Sandhills NWR, SC, May 21 (Peter Range); and a Swainson's was late at Pendleton, SC, May 22 (Sid Gauthreaux, Jr.).

AMERICAN PIPIT: The wintering flock at Hooper Lane, Henderson County, NC, peaked at 300+ March 7 as noted by Wayne Forsythe.

CEDAR WAXWING: A pair was seen building a nest at White Lake, NC, May 30-31 as noted by Herb Hendrickson. This species is a sporadic breeder in the eastern part of the state, and nesting in the coastal plain is rare indeed. One hopes that this site will be revisited during the summer to check on the outcome of the attempt.

LOGGERHEAD SHRIKE: Coastal reports of this species are always noteworthy. A pair was present at Ft. Caswell, NC, May 18, and nesting was suspected (Harry LeGrand, Jr., Jeff Pippen).

SOLITARY VIREO: One was unusual and late at Roanoke Island, NC, May 11 (Jeff Lewis).

YELLOW-THROATED VIREO: One was locally rare at the Dare County Air Force Bombing Range, NC, May 5 (John Fussell).

WARBLING VIREO: Reports away from the usual Ashe County, NC, area included one along the Broad River in Cherokee County, SC, May 10 & 13 (*fide* Lyle Campbell); one singing at Beaver Lake, Asheville, NC, May 19 & 25 (Simon Thompson, Ira Weigley); one in Mecklenburg County, NC, May 4 (Marek Smith); and a singing bird was very rare along the coast at the Elizabethan Gardens, Roanoke Island, NC, May 11 (Jeff Lewis, Kent Fiala).

PHILADELPHIA VIREO: The only report of this rare migrant was of one at Cedar Mountain, Transylvania County, NC, May 10 (Lynn Smith, *fide* Norma Siebenheller).

RED-EYED VIREO: One was very early along Old Woods Road, Orange County, NC, March 15 as noted by Ginger Travis.

"LAWRENCE'S" WARBLER: This very rare Blue-winged X Golden-winged hybrid was found at Croft State Park, Spartanburg County, SC, May 9-10 (Stephen Harris, Lyle Campbell *et al.*). This form is seen much less than the dominant "Brewster's" form.

ORANGE-CROWNED WARBLER: Excellent numbers of this warbler were found in the Carolinas this spring. The best totals came from the Jackson Park, Hendersonville, NC, area, where at least 13 different sightings occurred April 10-28 (*fide* Wayne Forsythe).

TENNESSEE WARBLER: One was east of the normal spring route in Edgecombe County, NC, May 11 (Ricky Davis).

CHESTNUT-SIDED WARBLER: Good numbers of this species were found farther east than normal this year. Some of the better reports included one in Richlands, NC, April 29 (Nell Moore); three in Edgecombe County, NC, May 11 (Ricky Davis); singles at Roanoke Island, NC, May 8 & 13 (Jeff Lewis); and one was quite early at Magnolia Gardens, Charleston, SC, April 10, as noted by Judy and George Halleron.

MAGNOLIA WARBLER: Roanoke Island, NC, produced good numbers, with the peak one-day total of six on May 10 being impressive for that coastal locality (Jeff Lewis).

CAPE MAY WARBLER: One was locally rare at Roanoke Island, NC, May 9 (Jeff Lewis), and one was very late at Clemson, SC, May 31, as noted by Drew Lanham (*fide* Steve Wagner).

BLACK-THROATED BLUE WARBLER: A one-day total of eight on May 10 was impressive for Roanoke Island, NC (Jeff Lewis).

BLACK-THROATED GREEN WARBLER: One was quite early for the northern coastal plain when found on the Dare County Air Force Bombing Range, NC, March 23 (John Fussell). And one was late at the Bodie Island, NC, Lighthouse woods May 24, as noted by Jeff Lewis.

BLACKBURNIAN WARBLER: Interesting reports included locally very rare singles at Roanoke Island, NC, May 8 & 9 (Jeff Lewis); one at the Savannah Spoil Site, Jasper County, SC, May 14 (Steve Calver); and a very late migrant was found in Cleveland County, NC, May 30 (JoAnn Martin, Pat Wilkison, Simon Thompson).

YELLOW-THROATED WARBLER: Very early arrivals included singing birds at Carolina Beach State Park, NC, March 2 (Harry LeGrand, Jeff Pippen) and at Havelock, NC, March 5 (John Fussell).

PRAIRIE WARBLER: The mainland Dare County, NC, area has been shown to have a healthy population of this species. This year however, the breeding birds were back in force quite early. John Fussell found an amazing 70 singing birds on the early date of April 4, proof of the early spring migration for many of the breeding passerines this year.

BAY-BREASTED WARBLER: Some of the more interesting reports this spring included one at Roanoke Island, NC, May 11 (Jeff Lewis) and an impressive one-day total of 10 in Ashe County, NC, May 18 (Ricky Davis).

BLACKPOLL WARBLER: This species was reported as being in excellent numbers throughout the Carolinas. The best reports involved an amazing 22 along the coast at the Savannah Spoil Site, SC, May 14 (Steve Calver); 18+ at Jackson Park, Hendersonville, NC, May 14 (Simon Thompson); a late bird on Roanoke Island, NC, May 27 (Jeff Lewis); and another late one at Greenwood, SC, May 31 (Steve Wagner).

PROTHONOTARY WARBLER: This species gets increasingly hard to find as one goes west towards the mountains. This spring one at Jackson Park, Hendersonville, NC, May 1-2 (Jennifer Wren, R. Hensley, m. ob.) caused much excitement. Also a pair on territory in Cleveland County, NC, May 31 provided a possible first local breeding record (JoAnn Martin *et al.*).

WORM-EATING WARBLER: One was very early at Alligator River NWR, Dare County, NC, March 27 (Jeff Lewis). Later a count of 15 birds in the same area May 25 (Merrill Lynch) was good for that coastal plain location. In South Carolina, where the Coastal Plain breeding population is much less understood, excellent counts of five on May 29-30 and on 12 May 15-22 were had along transects in Horry County (Lex Glover).

NORTHERN WATERTHRUSH: Good one-day totals included 7 being banded at Congaree Swamp Nat. Monument, SC, May 12 (John Cely) and 8 being found in Jackson Park, Hendersonville, NC, May 4 (Simon Thompson).

KENTUCKY WARBLER: This species is quite rare along the coast in spring, so of note were one on the Dare County, NC, mainland May 18 (John Fussell) and three different birds at Roanoke Island, NC, May 3, 10, 11 (Jeff Lewis).

CONNECTICUT WARBLER: This species provided excitement at several locations this spring. At Jackson Park, Hendersonville, NC, a singing male and a female were found May 15 (Wayne Forsythe *et al.* and Jennifer Wren) and were seen by several observers until at least May 25! In the Brevard, NC, area two males and a female were found independently during late May (Bill and Norma Siebenheller, Tom Joyce). Also one was a surprise at Landsford Canal State Park, SC, May 17 (Irvin Pitts).

MOURNING WARBLER: The very rare and exciting Mourning was found twice: singing males were at Jackson Park, Hendersonville, NC, May 18 (Wayne Forsythe) and near Robbinsville, NC, May 24 (Simon Thompson).

WILSON'S WARBLER: Wilson's were found in the usual limited numbers this spring. Single birds were at Richlands, NC, May 10 (Nell and Jimi Moore), Edgecombe County, NC, May 11 (Ricky Davis), Southern Pines, NC, May 11 (Scott Hartley), and Spartanburg County, SC, May 15 (Irvin Pitts).

ROSE-BREASTED GROSBEAK: This species staged what must have been a record spring migration in the Carolinas. Reports were far too numerous to mention individually, but observers from the mountains to the coast were unanimous in that the grosbeaks were everywhere! Especially interesting was the fact that many eastern and coastal areas had grosbeaks in record numbers. Also many reported that the birds were visiting feeders like never before!

BLUE GROSBEAK: A count of ten at North Pond, Pea Island NWR, NC, May 3 (Dwight Cooley) was impressive for that locality.

INDIGO BUNTING: At North Pond, Pea Island NWR, NC, a count of 50 Indigos May 3-12 indicated an impressive spring movement in that area (Dwight Cooley). Also one was quite early at Zebulon, NC, March 12, as noted by Eloise Potter.

PAINTED BUNTING: The wintering Painteds (at least 8 birds) in the Buxton, NC, area remained until at least April 19 (Chuck Hebenstreit). Also unexpected was one at the Bodie Island, NC, Lighthouse April 28 (*vide* Jeff Lewis).

DICKCISSEL: As usual this species makes news whenever found in the Carolinas. This spring's better reports included: three males west of Shelby, NC, May 10 (JoAnn Martin *et al.*); three near Cherryville, Gaston County,

NC, in May (Keith Camburn); two at Jones Island, SC, May 21 (Steve Calver); a pair near Thickety Creek Lake, Chester County, SC, May 10 (Alan Rose, Les Young, *fide* Lyle Campbell); one in western Carteret County, NC, April 25 (John Fussell *et al.*); one at South Pond, Pea Island NWR, NC, April 25 - May 2 (Dwight Cooley); and another at nearby North Pond, Pea Island May 26 (Merrill & Ida Lynch).

VESPER SPARROW: One was late south of Fayetteville, NC, May 10, as noted by Phil Crutchfield.

HENSLOW'S SPARROW: One provided a locally rare report when it was found near Gaffney, Cherokee County, SC, March 15 (Robin Carter, Caroline Eastman). The breeding populations at the VOA sites near Greenville, NC, were again censused by John and Paula Wright. This year they found 90 singing males at VOA-A May 25 and 65 singing males at VOA-B May 26. One cannot overstress the importance of these two sites to the species' population!

LINCOLN'S SPARROW: This species is rarely reported in the Carolinas in spring. Thus of note were one at Clemson, SC, April 26 (Simon Thompson) and an amazing two at Mason Farm, Chapel Hill, NC, May 2 (Jeremy Hyman).

SWAMP SPARROW: One was found dead at New Bern, NC, on the very late date of May 28 by Bob Holmes. Was this a sick individual that didn't migrate or just a late migrant casualty?

"MYSTERY" SPARROW: The "mystery" sparrow that frequented the Kohn feeder in Durham, NC, this winter (the 2nd winter in a row) was last seen April 12. Vocalizations were never heard, so the identity of the individual is still up in the air. A White-throated or a Fox Sparrow are the two most likely candidates. Also a "melanistic" White-throated Sparrow was identified on Roanoke Island, NC, May 10 (Jeff Lewis). This bird had a dark head, throat, and breast with the back and wings being almost normal. Is it just coincidental, or could it be the Durham bird?

WHITE-CROWNED SPARROW: One was locally unusual in spring and late at South Pond, Pea Island NWR, NC, May 2 (Dwight Cooley).

YELLOW-HEADED BLACKBIRD: Males were noteworthy at Ft. Macon, NC, April 27-29 (Randy Newman, *fide* John Fussell) and at Roper, NC, May 23 (Bill Blakeslee, Richard Ellenberg).

SHINY COWBIRD: A male was at the Cedar Island, NC, Ferry Terminal May 15 (John Fussell) and was found there until the end of the month. And a belated report of Shiny Cowbird involves one at the Winston-Salem, NC, Wastewater Treatment Plant on November 9, 1996 (Ramona Snavelly, Regina

Burt, Joyce Mauck). This is the farthest inland that a Shiny has been found in the Carolinas. Are there any limits to this species' invasion into our region?

BALTIMORE ORIOLE: Excellent counts for a coastal area were the eight at North Pond, Pea Island NWR, NC, May 3 (Dwight Cooley) and the nine on Roanoke Island, NC, May 11 (Jeff Lewis).

AMERICAN GOLDFINCH: An impressive flock of 500 was found in one area near Whispering Pines, NC, on April 27 (Susan Campbell), an unusually large congregation for any time of year!

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